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ABSTRACT

The possibility of using instructional television (ITV) as the core component in an instructional system designed to meet the special needs of the educationally disadvantaged children of migrant farm workers, of American Indians, and of the inner-city poor was appraised. The educational problems of each of these three groups were assessed and differentiated from the problems of educationally disadvantaged children in general. After a survey of the use of ITV systems to meet similar needs in other countries, the ITV systems used in Australia, Israel, Japan, and New Zealand were chosen for in-depth study. The ways in which these systems deal with such problems as introducing the core television approach, overcoming resistance to ITV, the effect of the student-to-system relationship on the learning process, reducing the consequences of sporadic school attendance, upgrading the skills of teachers, and teaching basic skills in language and mathematics were studied in detail. When the experiences of these ITV systems were used to evaluate ITV in terms of the particular needs of each of the three target groups, it was found that the use of ITV to present a core curriculum would be an effective means of accomplishing significant reforms only in the education of American Indian children. A special analysis was also made of the potential role of ITV in junior and community colleges. (JY)

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ITV AND EDUCATION OF CHILDREN
OF
MIGRANT FARM WORKERS, INDIANS, AND INNER-CITY POOR:
CROSS CULTURAL COMPARISONS
OF
INTERNATIONAL USES OF MEDIA

Volume I

January, 1971

U.S. DEPARTMENT OF
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Office of Education
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ITV AND EDUCATION OF CHILDREN
OF
MIGRANT FARM WORKERS, INDIANS, AND INNER-CITY POOR: CROSS-CULTURAL COMPARISONS OF INTERNATIONAL USES OF MEDIA

Volume I

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The American University
Washington, D.C.

January 1971

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U.S. DEPARTMENT OF
HEALTH, EDUCATION, AND WELFARE

Office of Education
Bureau of Research

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PREFACE AND ACKNOWLEDGEMENTS

This study addressed the problems of the educationally disadvantaged in the United States from the perspective of the experiences gained in selected other countries with the use of ITV on a large scale. Many studies on various aspects of the educational problems of children of migrant farm workers, Indians on reservations, and the inner-city poor have been conducted in the past. Also, the comprehensive International Institute of Educational Planning (IIEP) study (Schramm, et al, 1967) on the uses of educational media internationally has been followed by several reports of other specific uses of media (e.g., [Institute for Communications Research, January, 1970.]). Three principal considerations of the present study, therefore were : (1) to avoid duplication of prior efforts; (2) to make maximum use of the most sound results in prior studies of the three target groups; (3) to focus, in the case studies prepared on media use in Australia, Israel, Japan, and New Zealand (see Volume II of this report), on those aspects most relevant to the educational needs of the target groups not previously covered, or only partially addressed, in the IIEP volumes and the subsequent media studies.

The advice and counsel of a distinguished advisory committee were essential in helping the project staff follow the above guidelines. The members were selected on the basis of their prior experience and expertise in either the educational problems of the disadvantaged or in international uses of media. While the study benefited immeasurably from their inputs, only the authors, of course, are responsible for any inadequacies reflected in the report. The following persons were members of the advisory committee.

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Dr. Katz also served as technical advisor for the case study on ITV use in Israel. Dr. Lyle, in addition to preparing the case study of media use in Japan, had a major role in the formulation of the content of Chapter III. He joined Dr. Block and Dr. Lybrand of the project staff, in providing first hand, personal knowledge of recent media use in American Samoa, the Ivory Coast, and Niger, which supplemented the information contained in the four formal case studies and the previous literature.

The authors also wish to express their appreciation to the authors of the other case study reports: Dr. Naomi Kies of the Department of Political Science, Communications Institute at Hebrew University in Jerusalem, Israel; Dr. Paul Kimmel, Director of the AID International Training Assessment Program at The American University, Development Education and Training Research Institute (DETRI). Their thoroughness and perspicacity in carrying through on a difficult assignment, involving prescribed study and report formats can only be commended.

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SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

SUMMARY

The objective of this study was to appraise the potential of using instructional television (ITV) as the core component--that is, for the basic instructional communications function--in non-traditional school system design strategies for meeting the needs of three target groups--the children of migrant farm workers, American Indians and the inner-city poor.

The educational problems of each of the target groups were analyzed in terms of the conditions that are mitigating against success of traditional educational strategies with these groups. Case studies were prepared on the experiences of Australia, Israel, Japan, and New Zealand in using media strategies in educational systems which were designed to cope with some of the same conditions. The report on the Israeli ITV system represents the first published case study in depth of that system. The lessons adduced from these experiences, along with ITV system experiences in American Samoa and Niger, provided the basis for appraising the potential usefulness of a core ITV strategy with the three groups.

CONCLUSIONS

Key Conditions Facing Educational Planners

1. The job dependent movement of migrant farm workers, which is constant in neither rate nor direction, is the basic obstacle to the education of migrant children. The children lack the sense of continuity and consistent frame of reference needed for learning. They ordinarily change schools several times a year (when they attend school at all) as their parents move from one short-term job to another. They miss classes when their parents need help to bring in crops before spoilage. They cannot progress through school on schedule, and often drop out as soon as possible.

2. The quality of instruction offered to the children of American Indians is generally of poor quality. Teacher turnover is high and many of the teachers share community antipathy toward the Indians. The use of bilingual, bicultural educational materials is limited, particularly in the public schools which are attended by some two-thirds of the Indian children. Indian adults are rarely involved in the schools serving their children. Many Indians tend to live in sparsely populated areas so their children must be bussed to Federally operated day schools or placed in Federal boarding schools. In spite of the fact that boarding school placement has been almost universally judged psychologically damaging, the boarding schools continue to be used.

3. The schools serving the children of the inner-city poor have yet to devise a satisfactory means of teaching the basic academic skills in the early elementary grades. Without the foundation in the basics, the children are ill-equipped to cope with more advanced work and their performance deficit becomes larger through Grade 12. The situation is mutually frustrating to students and teachers. The students often are alienated or even hostile, and teachers fatalistically resigned to the impossibility of teaching many of their students.

Lessons Adduced from International Uses of Media

Cross-cultural comparisons of the international uses of media covered in this study support the following conclusions.

4. Requirements for Introducing a Core ITV Strategy

a. An explicit, specific, pedagogical rationale is necessary for core use of ITV, focusing on sharply defined educational problems; generalized rationales based totally, or largely, on anticipated educational cost-savings should not be used.

b. An intensive pilot program should be conducted, allowing adequate time for: initial development of high quality programming; training of system personnel, including teachers; utilization of empirical pupil performance evidence from the classroom on the learning effectiveness of the programming; assessment of system administration and operations; and collection of "hard" data necessary for reliable cost/effectiveness projections for the total system.

c. The ITV system should be used as the large-scale distribution system it is and should be designed in terms of either a large number of users or intensive use by smaller groups of participants.

d. An evaluation program, involving utilization feedback from the classroom based on objective resources of pupil performance, as well as teacher judgments, should be initiated at the outset for use during ITV system development, then subsequently institutionalized on an on-going basis during system operation.

5. Three Critical Accomplishments

a. ITV and other media have been used successfully to overcome the consequences on educational attainment of physical isolation from the traditional school environment.

b. ITV has been used successfully to upgrade the instructional skills of teachers as well as to provide basic training to paraprofessionals in classroom supporting roles.

c. ITV has been used successfully to teach basic skills, such as language and mathematics, in bilingual, bicultural learning situations.

The Potential of Core Use of ITV

6. With the Children of Migrant Farm Workers

Core ITV use would not effectively address the key educational problems of the children of migrant farm workers, namely, the lack of regular exposure to scheduled instruction. There is no evidence to suggest that when on the move children would be able to attend ITV "schools"--whether mobile vans, community viewing centers along migratory routes, or whatever--any more regularly than they now attend the public schools. Further, the cost of an ITV system, with the need for differential linguistic and cultural programming for the ethnically distinct streams, cannot be justified compared to other educational strategies. The changing character of the migratory work force--its diminishing size and the shorter distances being traveled (two-thirds travel only in their own home state)--suggest that special concentrated basic skill instruction in home community schools for the four-to-six months the children are there, accompanied by supplementary enrichment programs at stopping sites along the migratory stream route, is a potentially cost/effective strategy deserving further consideration and evaluation.

7. With the Children of American Indians

Core use of ITV appears to offer an effective means of accomplishing a significant reform in Indian education. A key condition affecting Indian education, namely, the lack of temperamentally suited and academically qualified--for cross-cultural situations--teachers, can be addressed by high quality bilingual, bicultural ITV programming coupled with intensive ITV training for classroom teachers and monitors. The teachers can be trained, not only in the ITV curriculum and tele-pedagogy, but also in cross-cultural communication and interaction techniques. Indian paraprofessionals can be trained to be classroom monitors, as has been successfully done in Niger. Viewing centers can be established in remote areas utilizing such paraprofessionals, thus reducing the need for long bussing or for early grade admission to boarding schools. Although designed primarily for core ITV use in Federal boarding and day schools and the viewing centers, the ITV programming would be adapted for selected direct teaching and for supplemental, enrichment, and remedial teaching in the public schools serving Indian children. The ITV system also can be used for pre-school and adult language and cultural enrichment programs.

8. With the Children of the Inner-City Poor

A core ITV strategy does not seem to offer any unique means of coping with the key conditions adversely affecting the education of ghetto children. There is no shortage of teachers in the inner-city schools; moreover, attempts to improve their instructional effectiveness through use of core ITV would likely have two serious drawbacks. First, institutional resistance of the existing teachers would be formidable and most costly to cope with. Second, it is possible that a boomerang effect would be created, in which the negative affect between many teachers and students would be increased by unjustified student comparisons of the classroom teachers with tele-teachers. ITV should be given further consideration for use in direct teaching and supplemental teaching roles in specially designed continuing education programs for "drop-outs" and in vocational training programs.

9. In Junior and Community Colleges

A Special analysis on the potential use of core ITV in two-year colleges was conducted. This analysis was based on an examination of the problems confronting these colleges with particular emphasis on the function of these institutions as perceived by the institutions themselves. The phenomenal growth of the two-year college in the past decade has not been without major problems, primarily stemming from the inadequacy of the four-year model--in curriculum and approach--which was generally emulated in their design and development. The key problems in the two-year college search for identity are: the lack of faculty trained and experienced in coping with a heterogeneous, less academically qualified student body than is typical in four-year institutions; the need for closer community relationships than are typical with four-year colleges; the difficulties associated with offering a three-track program--remedial academic, general academic, and occupational. Core use of ITV is not recommended because of both pedagogical and economic problems; however, the selective use of ITV in direct, supplemental and enrichment roles in remedial and occupational courses is an educational strategy that should be given consideration.

RECOMMENDATIONS

The following recommendations were made on the basis of this study.

1. Core use of ITV--that is, using ITV for the basic instructional communications function in direct teaching in

all curricular areas--is recommended as a concept for accomplishing a large-scale curricular reform of Indian education. It is further recommended that the concept be pilot tested in existing Federal boarding and day schools and in proposed Federally established viewing centers in remote locations on Indian reservations.

2. The ITV programming developed under 1. above should be adapted for direct teaching in selected courses and for supplemental, enrichment, and remedial teaching in the public schools serving Indian children.

3. ITV programming for the kindergarten through Grade 6 levels should incorporate an Indian-Anglo bilingual, bicultural approach, with programming thereafter only in the English language. The curriculum at the secondary level should provide vocational and technical, as well as academic/college preparatory concentrations.

4. The ITV system should be used for role-concept and human relations skills training of dormitory aides in boarding schools, as well as for cross-cultural tele-pedagogical training of teachers in the boarding, day and public schools.

5. The ITV system should be used to train Indian paraprofessional teaching aides as ITV classroom monitors, particularly for use in local viewing centers which should be established in remote locations on the Indian reservations. Kindergarten through Grade 3 levels would be offered in these viewing centers, which would serve as feeder schools to the boarding, day, and public schools for the remaining grade levels.

6. It is recommended that the ITV system concept be pilot tested with children in the Navajo area, with subsequent diffusion to other Indian tribal groupings starting immediately after the pilot period. The system should be introduced in an area, one grade at a time, starting with the kindergarten level; a generational social change strategy is being recommended, not a quick-fix solution to the current accumulated educational deficit problem.

7. A six-year pilot project in the Navajo area, in which the ITV system concept would be developed and tested at the kindergarten, 1st and 2nd grade levels, is recommended. The pilot project would be conducted as an integral part of the sixteen-year period required for total kindergarten-12 system development. Six years will be required in order to allow sufficient time to accomplish five objectives.

a. To establish a firm foundation for development of the operational ITV program by providing an initial two-year period during which project staff will be recruited, project facilities established and curriculum planning accomplished in the context of an in-depth exposure to, and study of, the Navajo culture.

b. To develop and test the ITV system concept, including all operating sub-systems--curriculum preparation, ITV program production, training and utilization, maintenance unit, and research and evaluation--as well as the learning effectiveness of the ITV programs and supporting teacher and student materials in the classroom.

c. To assess the feasibility of using the ITV system for pre-school language, socialization and learning readiness programs and for adult literacy and other special education programs.

d. To collect valid costing data, and reliable demographic data on the Indian population, in addition to that currently available, in order to prepare sound cost/effectiveness estimates for implementation of the kindergarten-12 operational system for all Indian children.

e. To develop the plans for continuation of systems development beyond the pilot project period and for its diffusion to the remaining Navajo children, Indian children on the reservations of other tribal groupings, and to the public school systems near the reservation areas serving Indian children.

8. As a first step, it is recommended that representatives of the Indian tribes, including specifically the Navajo, be involved in a review of the rationale for the ITV system concept and, assuming their concurrence in the potential of this approach to Indian education, be further involved in program management during all subsequent phases of system development and operation.

9. Finally, it is recommended that a detailed implementation proposal be developed on the basis of planning and feasibility studies beyond the scope of this research (e.g., engineering studies of feasibility of using 2500 megaHertz transmission systems). The proposal, which should be developed with Indian participation, would refine the pilot project design and cost estimate of $7,268,000 for the six-year period, and thus provide the documentary basis for obtaining the support necessary--political, legislative, administrative, and fiscal--to execute the proposed pilot evaluation.

CHAPTER I

INTRODUCTION

> Can technology help to meet what many regard as the most pressing problem in education today: the needs of the poor--in the central cities, in depressed areas, on Indian reservations?
>
> Not surprisingly, there is very little evidence at present on which to base a sound conclusion. Most of the experimentation with instructional technology has been in the more affluent school systems (Commission on Instructional Technology, 1970).

BACKGROUND

Instructional television (ITV) is being used rather extensively in United States public school systems at the present time. For the most part, however, it is being used in a supplemental or enrichment role to support the primary instructional communications function of the teacher. In a few schools, it is being used for direct teaching of selected courses, functioning as the indispensable instructional component with the teacher assuming the supplemental and/or enrichment role(s).

Even including those instances in which ITV has been used for direct teaching in selected courses, such as in the Dade County, Florida school system and the Washington County (Hagerstown), Maryland school system, ITV has been introduced as an add-on and over-lay to the existing school system configuration. Its introduction necessarily has led to some within-system adaptations: new professional roles, space and facilities for program production have been added in some school systems, for example. However, the basic design configurations of most United States school systems look about the same with or without instructional television.

This fundamental school system design configuration, with the teacher at the center of the instructional communication process, has served the mainstream educational enterprise well. It is now generally accepted, however, that it is not serving nearly as well those children outside the mainstream--three groups in particular are the children of migrant farm workers, American Indians and the inner-city poor. Many different alterations in approach and concept have been made within the system in attempts to cope with the problems of the educationally disadvantaged, but, to date, after the expenditure of much time and many resources, the problems persist.

It is in this context that the suggestion has been made that the overall school system design configuration itself may be inappropriate for groups who, for a variety of reasons, are outside the mainstream. For these groups, new school system design configurations may be more appropriate--as the movement toward mini-schools, open schools, "schools without walls" would indicate. Clearly, coping with the educational problems of the children of migrant farm workers, reservation Indians, and inner-city poor has proven most difficult for school systems that presume as a condition for success: a single building, or building complex, to which all students come throughout the nine-month school year for a full day's learning experience; an adequate supply of fully qualified teachers; students, who, if not highly motivated, at least are not alienated from the learning process or the teacher's role; a community environment in which the interests and involvement of parents and other adults in the educational process are supportive, or at the very least not counterproductive, and in which there are a minimum of cross-pressures on children which mitigate against their fully utilizing their educational opportunities.

The lack of these presumptive conditions for success of the traditional school system design configuration is not unique to the United States and the groups mentioned. Since World War II, many other nations of the world have been faced with the task of educating burgeoning populations with few or no qualified teachers in the traditional sense, no historical experience on which to draw for motivation and support, with little directly perceived need for the educational experience on the part of the children's parents, and frequently with no common language or even common culture. In a number of these situations school systems have been established in which the new media have been given a core instructional communication role. Even on a worldwide basis, the new media, including ITV, are being used predominantly in a supplementary and enrichment role. But in school systems such as those established in American Samoa, Israel, Ivory Coast and Niger, ITV is being given a direct teaching role in all curriculum areas.

In summary, in all its types of uses--enrichment, supplementary, but particularly in direct use--media systems in many foreign countries have had to cope with educational problems in situations in which the conditions for success associated with traditional United States school system design configuration were rarely present. It seems appropriate therefore to examine the experiences of international uses of media, particularly those in which the media were utilized in key instructional communication roles, to determine if any of the lessons learned are applicable to an appraisal of the potential of ITV being used in new school system design strategies for meeting the educational needs of the children of migrant farm workers, American Indians, and the inner-city poor.

PURPOSE AND SCOPE

The objective of this study was to appraise the potential of using instructional television (ITV) as the core component--performing the basic instructional communication function--in non-traditional school system design strategies for meeting the educational needs of the three target groups --the children of migrant farm workers, American Indians, and the inner-city poor.

The appraisal was to be based primarily on lessons adduced from international uses of core media approaches to meeting educational objectives in situations with less than optimal presumptive conditions for success of traditional educational school system design strategies.

APPROACH

The study was conducted in three phases.

The first phase focused on a definition of educational problems of the three target groups being considered. The 1967 UNESCO IIEP Report on the uses of media internationally (Schramm et al., 1967) stated:

> If we were asked to name the most basic requirement on the evidence of our case studies [for effective use of media] we would say: let it begin with a problem, let the project not begin with a piece of new technology which someone thinks could or should be in use. Above all let it not begin as an excuse for adding technology which is primarily for other purposes.

The literature on the education of the "disadvantaged" generally and studies on the problems of the three target groups specifically provided the primary data source for the secondary analyses conducted in this study (see Bibliography). A separate analysis was conducted on each of the target groups; the insights afforded through these analyses are presented in distilled and edited form in Chapter II of this report.

During this phase the recent literature on community and junior colleges was sampled. An analysis of that educational context was conducted to explore the desirability of further consideration of instructional ITV as the primary instructional communications medium in that context. That analysis became the basis for the discussion on the potential of ITV for community and junior colleges presented in a Special Analysis and Report following Chapter IV in this volume. It was decided, with the concurrence of the Office of Education, to give study priority to the educational problems of the three target groups when it became apparent that the educational problems of those being faced in the community and junior college situation were markedly different, despite a superficial similarity. The paper presented should be considered as preparatory and exploratory and not a definitive appraisal of the potential of using ITV in a core component fashion in the community and junior college situation.

The second phase of the study focused on selection and analysis of data on international uses of media. On the basis of the work conducted in the first phase, a detailed set of information requirements was identified and defined for use in conducting a series of case studies on the use of media systems. This set of information requirements was used initially to determine whether or not enough information was already available about a media use to allow lessons relevant to appraising the potential of ITV for the three target groups to be adduced without the necessity of making site visits and conducting the field research necessary to prepare a new case study.

A critical aspect of the effort in the second phase was selection of media use sites for study. With the advice and counsel of the project's Technical Advisory Committee, media uses in 14 countries were identified as potential candidates for case studies. It was recognized that no single case study site would have experiences totally transferable to the educational situation of any particular target group of concern to this study. Rather, the 14 instances of media use were nominated because each had to cope with at least one of the educational problems of one or more of the three target groups. The strategy was to select a set of media use cases that would in combination provide evidence which would be transferable to the educational situation of the three target groups. Media use in the 14 countries identified as potential case study sites were the following:

- American Samoa
- Australia
- Colombia
- El Salvador
- England (London)
- Israel
- Italy
- Ivory Coast
- Japan
- Mexico
- New Zealand
- Niger
- Scotland (Glasgow)
- Singapore

The list was narrowed to 11 on the basis of information available in the United States. The Ivory Coast program which envisions the use of instructional television in a total educational reform of the primary educational system there, was just getting underway and therefore the fund of experience from which lessons could be adduced was limited compared to most other possibilities. In Colombia, where ITV was being used in the primary grades, as well as for teacher orientation and training, the system was undergoing a conversion process from United States Peace Corps to indigenous Colombian management.

It was not a propitious time for field research there. Finally, media use in El Salvador, for direct teaching in the first three years of high school in the areas of science, mathematics and social studies was just getting underway and again the fund of experience was limited compared to the other cases.

The media systems in England, Israel, Italy and Scotland were visited in order to collect the information needed to assess their attractiveness as a case study site. In Italy the ITV program of interest had been discontinued. Earlier, ITV had been used to provide core curriculum instruction in the first three secondary grades for children living in rural areas. It also had been used for basic adult literacy programs. The program to the rural areas had been discontinued because new school facilities had become accessible through road building programs. While in many ways exciting and innovative, ITV use in both London and Glasgow was found to be very selective, serving primarily supplementary and enrichment roles. Furthermore, the organizational arrangment in London was very complex and not very amenable to a case study approach that would allow comparison with other case studies. The potential return on case study investment at these three locations, therefore, was considered negligible. The Israel case study was determined to be of primary interest.

In addition to Israel, five other countries were selected because of the transfer potential of their media use experience: American Samoa, Australia, Japan, New Zealand, and Niger. The media systems of Australia, Israel, Japan and New Zealand are summarily described in the first part of Chapter III. The detailed case studies on each are found separately in Volume II of this final report. The prior direct first-hand experience of the project's Technical Advisory Committee members was deemed an adequate supplement to previously published studies of the two media use situations in American Samoa and Niger; thus it was decided not to prepare formal case studies on them. These systems have been described extensively elsewhere (e.g., Platt, 1969). In summary, American Samoa was important because it represents the most comprehensive attempt to raise educational standards by core use of instructional television. One-third of all classroom time from Grade 1 through high school is devoted to teaching by instructional television. In addition, the system was designed to overcome a shortage of qualified teachers by using ITV to upgrade and train the existing corps of teachers. Niger represents the best example of the creative use of ITV at the primary level. Although all instruction was in French, the program emphasizes local cultural factors and the concept of education as a joint venture in which the students and the teacher learn together, incorporating lively student participation led by a classroom monitor with minimal (six years) educational attainment. The observed behavior of children in experimental ITV classrooms when compared with children in traditional classrooms supports the view that the ITV approach stressing discovery methods and personal selfactualization was effective.

Subsequent consideration was given to the possibility of preparing formal case studies on Singapore and Mexico, but it was decided in concert with the Office of Education, that the cost of intensive study of these two situations was disproportionate to the likely gain in transferable knowledge over and above what was being acquired with the six cases originally selected. The multi-language, multi-cultural requirements for the Singapore system in selected classes at secondary level is quite similar to conditions found in American Samoa, Israel and Niger. In Mexico, the use of ITV to bring a secondary education to students living in remote areas has many of the features of the use of media in Australia and New Zealand, and with regard to the use of examinations and monitors, was similar to the Japan case.

Special arrangements were made for the Israel case study. The system had been established originally to handle an "educationally disadvantaged" group--immigrant Jews from Asian and Arab countries, whose linguistic and cultural backgrounds differed dramatically from the predominantly Western cultures of much of Israel. Also, the Israel ITV system has not been previously described in detail in the published literature. Thus, a major serendipitous contribution to this study is the publication of the Israel case study. A rather extensive history of the development effort which went into that system is contained in the formal study, included in Volume II.

Lessons adduced from the case studies are presented in the second part of Chapter III.

Chapter IV presents the detailed conclusions and recommendations of the study regarding the potential use of instructional television as a core instructional communications component for the educationally disadvantaged generally, and for each of the three target groups of concern to this study --the children of migrant farm workers, American Indians, and the inner-city poor.

CHAPTER II

FACTORS RELATED TO EDUCATIONAL PERFORMANCE OF DISADVANTAGED LEARNER TARGET GROUPS

INTRODUCTION

The target groups under study are the children of the migrant farm workers, the American Indian children on reservations, and the children of the inner-city poor. Because all three groups are poor, the families, in many cases, are frequently so plagued with problems of survival that they are unable to provide the material and emotional support needed by children to learn efficiently. Many of the children in these groups are of racial minorities, so their problems stemming from poverty are compounded by those arising from racial prejudice. In all three groups, the life styles, customs, values, languages, and communication modes are quite different from those of the typical school student.

The problems beginning students of these three target groups have in adjusting to the school situation frequently are not surmounted. As a result, the students, already beset with problems outside the school, rarely succeed in acquiring the initial, fundamental academic base needed to succeed thereafter in school. The students are demoralized by their lack of success, and, in turn, their teachers are demoralized by their inability to effectively teach the students. Academic retardation is endemic in the schools attended by the three target groups.

This chapter discusses the specific conditions and characteristics of the three target group situations relevant to possible strategies of core media use to cope with the educational problems of each group. Clearly, a long-range societal strategy for indirectly coping with these educational problems is to directly attack the conditions which may be fostering them, such as inadequate housing, poor health services, and persistent job discrimination. Such societal strategies are beyond the scope of this study, which is concerned with school system strategies for directly addressing the educational problems.

Further, it will be recalled that this study is focused on the possibility of core media use, specifically instructional television, with the three target groups. The problems of these groups have occasioned many compensatory and special educational programs in the last ten years, some involving media, but many focusing on other educational approaches and innovations. Although occasionally an example may be cited in this report, a comprehensive, evaluative review of the effectiveness or non-effectiveness of such programs is outside the scope of the study.

MIGRANT FARM WORKER SITUATION

The Migrant Farm Worker

About 900 of the nation's 3,100 farming counties depend on the labor of farm workers from outside the county during peak harvest seasons. Many of the nation's three million farm wage-workers commute from a metropolitan area to a farming area, but about a quarter of a million leave their home counties annually to do farm wage-work, particularly in labor-intensive crops which cannot be harvested with local labor alone. In 1967, some 276,000 persons left their home counties to do such work; these are the people referred to as migrant farm workers (U.S. Senate Report No. 91-83, 1969, p. 1-3).

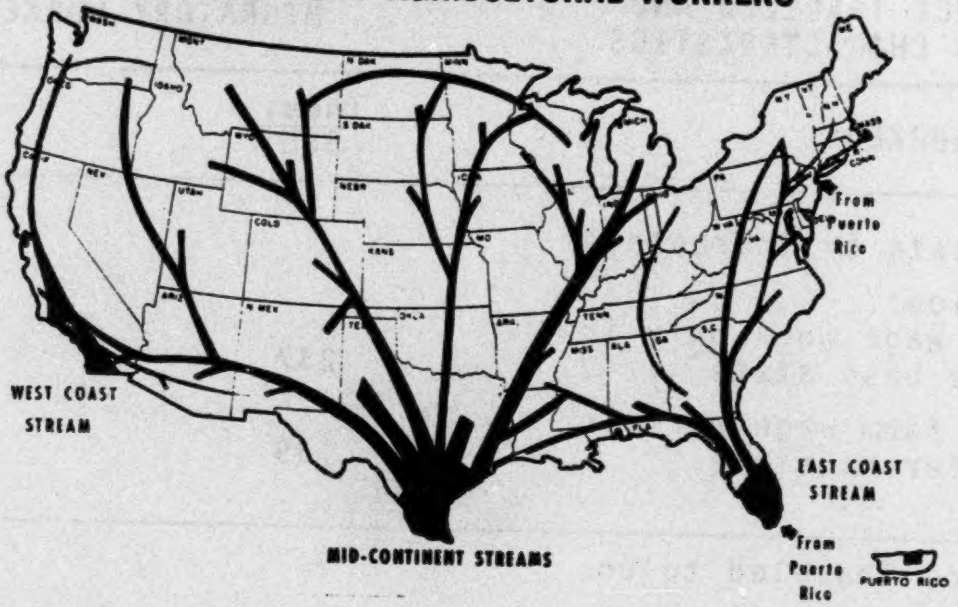
According to a 1967 Congressional Committee Print: migrant people belong mainly to Spanish-speaking, Negro, Indian, and low-income "Anglo" minorities; the average migrant, generally, is skilled in agriculture, but inexperienced and unskilled in other occupations; with minor exceptions, migrants, at both their "home" communities and their work sites, are housed in slum quarters; and rejection and non-acceptance by the majority society is common even in their "home" communities (Public Health Service Report to Senate Subcommittee on Migratory Labor, 1967, p. 2).

Migratory Streams. Every year thousands of migrant workers and their families move in three major human streams across the country, from one short-term job to another. The East Coast stream, which draws workers from Florida and the Southeastern states, is composed mostly of Negroes. They begin during the winter months with the citrus and winter vegetable crops in Florida and move from the Southeastern seaboard through the Atlantic Coast states as far north as New England. The largest stream, which originates in Texas and covers most of the North Central Mountain and Pacific Coast states, is composed almost entirely of Mexican-Americans. They work in fruits, vegetables, sugar beets, and cotton. The Western stream, which is composed of workers chiefly of Mexican descent, originates in California and moves up the coast into the Pacific Northwest, the workers harvesting fruits and vegetables (Senate Report 91-83, p. 2).

Figure 1 shows the major travel patterns of migratory workers in the United States.

Figure 1

TRAVEL PATTERNS OF SEASONAL MIGRATORY AGRICULTURAL WORKERS



Source: 1969 Report of the Committee on Labor and Public Welfare, U.S. Senate, p. 3.

In 1967, Avra Rapton of the U.S. Department of Agriculture's Economic Research Service conducted an analysis of migrants' characteristics based on information from the December 1964 and 1965 Current Population Survey.[1]

The data on distances traveled by migratory workers to work included in that report suggest the presence of cross-stream mobility patterns that sorely need more precise identification. Cross-stream patterns may be as important as vertical patterns for a basic understanding of migrant mobility and the effect of such mobility upon the lives of migrant workers and their children.

The following 1964 data, extracted from Rapton's Table II illustrates the point:

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[1] This survey, based on a national sample, is conducted monthly by the Bureau of the Census for the Department of Labor which uses the data to estimate employment.

Table 1

LONGEST DISTANCE TRAVELED AND RELATED CHARACTERISTICS: NUMBER OF MIGRATORY FARM WAGE WORKERS, 1964

DISTANCE TRAVELED AND RELATED CHARACTERISTICS	MIGRATORY WORKERS	
	Thou.	Pct.
TOTAL WORKERS	386	100
Interstate or Intrastate Migration:		
Farm wage work only in home base state	247	64
Some farm wage work in different state	139	36
Distance Traveled to Do Farm Wage Work:		
Less than 75 miles	197	51
75 to 399 miles	69	18
400 to 999 miles	42	11
1,000 miles or more	77	20

The fact that 64 percent of the migratory workers sampled did farm wage work only in the home base state and that nearly 70 percent traveled less than 400 miles to do farm wage work may indicate the presence of cross-stream "medium range" mobility patterns for migrant workers. According to the Rapton data, only 20 percent of migratory workers traveled 1,000 miles or more to do farm wage work. Those who do travel far from their home bases are more likely to take their small children with them than are those who work close to their home bases (Rapton, 1967, p. 7).

Rapton's data, however, may be biased towards larger numbers of migratory workers in the "less than 75 miles" and "75 to 399 miles" categories because of the basic definition of "migratory status:"

> Farm wage workers were classified as migratory during the survey year if they left their homes temporarily (at least overnight) to do farmwork for cash wages in another county within the same State or in another State, with the expectation

> of returning home at the conclusion of their period of farm wage work. Persons who had no usual place of residence and did farm wage work during the year in two or more counties, either in the same or in different States, were also classified as migratory farm wage workers (op. cit., p. 26).

In spite of this limitation, the Rapton data do indicate that cross-stream mobility patterns of migrant workers are complex. Apparently, the traditional migratory paths are undergoing substantial modification with increased mechanization of farming, changing transportation modes, and different labor practices. These factors and the economic and social changes which are affecting the agriculture business generally will very likely complicate even more the travel patterns of migrant workers in the future.

If such cross-stream, medium-range, patterns are substantiated in new studies, they could have critical bearing upon decision-making with regard to educational system design for migratory workers. If most school-age children are indeed located in a relatively small geographic area, then the system alternative should reflect this fact of geography.

Crew Leaders. Many migrant workers, both those who travel in family groups, and those who travel singly, work in crews and are recruited, transported, housed, fed and paid by crew leaders. To many farmers, the crew leader is indispensable as a primary source of labor. According to James MacGragor:

> In the labor camp, the crew leader is foreman, paymaster, Dutch uncle, money lender, grocer, policeman, judge, and jury. Police and other local authorities leave the operation of labor camps almost entirely to the crew leaders (MacGragor, Wall Street Journal, September 15, 1969).

Obviously, the crew leader is a powerful figure and one whose interests must be taken into account in implementing any kind of program to aid migrant workers and/or their families. The crew leader's primary responsibilities include recruitment, the contracting of work, and insuring worker productivity in harvesting the crop. In this latter responsibility, he often works in collusion with farm owners and growers as successful execution of this responsibility directly benefits the owner/grower, the crew leader, and the migrant laborers.

Crew leaders and growers operate within a narrow range of time-dependent conditions: the crop has to be harvested at a specified time, workers have to be organized for picking at the precise time the crop is ready for harvest, enough workers have to be available for harvesting. And, to obtain maximum crop yield, an allowance for detrimental weather conditions has to be considered. Thus, an intrusion of whatever character during this time period is viewed as interfering with the primary task of getting out the crop.

Neither growers, crew leaders, nor the ultimate beneficiaries, the migrants themselves, are likely to be responsive to any program--educational or other--that they perceive as economically threatening. Thus, it is extremely difficult to conduct an education program that is both effective and fits the time-dependent work framework of crop-harvesting. The problem is further compounded by the fact that any work-site program is very likely to interfere with the autonomy to which both the crew leaders and growers are accustomed.

Poverty and Poor Health. According to the Department of Commerce, the median family income in the United States was $8,632 in 1968. This is more than four times the annual earnings of the highest income group of migratory workers--those employed at both farm and non-farm jobs. In fact, the migrant worker's average wage income was lower than the wage and salary income of any other major occupation group except domestic service workers.

The average farm wage rate paid migrants in 1967 was $10.85 per day. Migrants employed exclusively at farm work earned about $922 during the year and worked about 85 days of the year. Those who also worked outside of agriculture earned $2,100, of which about $800 came from farm work (U.S. Senate Report 91-83, 1969, p. 54).

The combination of low wages and a short work-year creates a double hardship on migrant families. The parents must work when work is available and consequently subordinate all else. The schooling of the children is necessarily curtailed as the parents move. Furthermore, the parents need their children either to care for younger children or to work to supplement the family income. Even then, their incomes are so limited that they are unable to meet even the basic food and shelter needs let alone to provide adequate clothing, school supplies, lunch money, and a place to study.

The magnitude of health problems facing migratory workers and their families is enormous. According to a

December, 1967 Congressional Committee Print:[2]

> Of the more than 1 million migrants, including workers and their dependents, 750,000 still live and work outside the areas served by existing migrant health projects. This group includes, by conservative estimates--
>
> 1. Over 6,500 persons with diabetes who are without adequate medical care.
> 2. Over 5,000 migrants with tuberculosis who are traveling and working with their disease undetected and untreated.
> 3. Over 300 children under the age of 18 who have suffered cardiac damage as a result of rheumatic fever. These children are unlikely to receive treatment for prevention of re-infection and further cardiac damage. Such treatment is ordinarily readily available to most non-migrant children in their communities.
> 4. Approximately 9,800 children who have undiagnosed and untreated iron deficiency anemia. This increases their susceptibility for childhood infection and interferes with their normal growth and development.
> 5. Over 250 infants who will die in the first year of life as a result of congenital malformation or disease. Early, adequate medical care will not be available for these infants.
> 6. Over 16,000 expectant mothers who will find it difficult to obtain prenatal care. Infant and maternal mortality can be expected to be significantly higher under such conditions.
> 7. Between 20,000 to 30,000 individuals who have enteric parasitic infestations--resulting in most cases from poor sanitation. Such a problem is almost nonexistent in the general public.

Digestive system diseases, respiratory disorders, and infective and parasitic disease are from two to five times as prevalent as they are in the general population.

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[2] U.S. Senate, Committee on Labor and Public Welfare, Hearings before the Subcommittee on Migratory Labor, Migrant Health Services; December 7, 13, 1967; USGPO: Washington: 1968, 87-443, p. 2.

Tuberculosis, alone, is seventeen times as common (U.S. Senate Report No. 91-83, p. 28). The life expectancy of the migrant is 55 years, for the Spanish-American migrant, it is 38. Children under five account for 41 percent of all Spanish-American migrant deaths (U.S. Senate Hearings, 1969, Who Are the Migrants, part k, p. 132).

Hunger and malnutrition are particularly acute. As non-residents, migrant workers are not eligible for local or federal programs. Lack of transportation and inadequate storage facilities make commodity distribution and food stamp programs ineffective for migrants. Furthermore, the dietary customs of the migrants are such that many foods included in the program are not acceptable.

The Migrant Child

The number of school-age migrant children is unknown. According to the 1969 Report of the Senate Subcommittee on Migratory Labor, the usual estimate is a school-age population range of 150,000 to 250,000 (U.S. Senate Report No. 91-83, p. 69). However, the number of children who actually leave their homes to follow the crops with their parents may well be considerably smaller if a migrant is defined as one who leaves his home county to do farm-wage work. As mentioned earlier, the number of workers in that category was estimated to be 276,000 in 1969.

Data are available on the number of children participating in State migrant education programs (see Table 2).

Table 2

PARTICIPATING CHILDREN-PERCENTAGE
BY LEVEL--3-YEAR COMPARISON

	FY '67		FY '68		FY '69*	
Pre-school	8,943	7.9%	30,777	13.5%	12,526	6.0%
Kindergarten	9,669	8.6%	22,648	9.9%	20,714	9.9%
Elementary	74,828	66.2%	140,094	61.3%	137,788	66.0%
Secondary	16,292	14.4%	31,903	14.0%	28,577	13.6%
Ungraded	3,264	2.9%	2,963	1.3%	9,267	4.5%
TOTALS	112,996	100.0%	228,385	100.0%	208,872	100.0%

*Total expected to participate.

Source: Statistical data as of 30 June 1969, from "Progress Report on Migrant Educational Progress," 1969 prepared by the Migrant Section, Office of Education, p. 4.

Of the 466,000 persons classified as migrant farm workers in 1965, some 144,000 were heads of households according to the Rapton paper referred to earlier. Some 22 percent of these reported that their children under 14 traveled with them on a migratory route. In other words, there were 140,000 children in the migratory stream that year. Some 50,000 of these children were traveling at some time between October and May.

If the 1965 proportions hold for the 1969 data, then there were roughly 77,000 children in the migrant stream in 1969. There is some reason to believe that these proportions may not hold. According to the Rapton report, Spanish-American migrants are more likely than the other groups to travel in family groupings. Since their families tend to be much larger, the proportion of children traveling is likely to be much higher. On the basis of 1957 data, Metzler reported that there were 6.5 persons in the average migratory household in Texas, which contrasts sharply with the 1.6 average household size yielded by the Rapton data.

Obviously, no one knows exactly how many children are traveling with their parents as they follow the harvests. One can surmise that the number is declining because both the number of migrants and the proportion of migrants who travel long distances from their home bases are declining. However, the number and location of school-age migrant children are factors that must be taken into account in assessing the varying alternatives for providing targeted education.

Migrant Families. According to an article published in 1969 by Myrtle Reul,[3] the migrant child typically comes from a large extended family with several children and a changing number of relatives and other persons attached to the household. In the Spanish-American migrant household, the father is the unquestioned head. It is not unusual to find entire work crews composed basically of the same extended family. Children in these circumstances often grow up never having had significant contact with people outside the family. Keeping the family together and working for the good of the family are perceived as important goals by all family members, children included. In these circumstances, the child learns early to respect his elders and to honor and defend his family in his relations with the outside world.

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[3] This section is based upon an article by Myrtle R. Reul, "The Migrant Child," which appears in the proceedings of the Ohio Conference on Migrant Education (Bowling Green, Ohio, August, 1969).

Kinship ties also play a major role in "Anglo" migrant families but, in these families, the grandmother often plays the dominant role. Even though the man is recognized as the head of the family, the decision-making role is often taken by the women. Typically, the needs of the adult members of the family take precedence over that of the children.

Within Negro migrant families, the dominant family role is more often taken by a woman, usually the grandmother. Families are extended beyond blood relatives and include boarders, lodgers, and poor relatives who live and work together as a unit. It is not unusual for a household to include children of other family members or outsiders.

The circumstances of the migrant child's life are such that he is constantly on the move from one set of crowded sub-marginal quarters to another. Because of over-crowded living conditions and constant travel, the migrant child rarely experiences a night of undisturbed sleep. Sleep deprivation and its concomitant psychological effects impinge on any classroom learning he does experience.

The traveling impoverishment gives the child little opportunity to develop a sense of belonging somewhere, or of personally owning something. By necessity, all household objects, even clothing, are collectively owned and consecutively used. The child quickly perceives that he has an object only so long as he is holding it. He finds it difficult to accept the concept of sharing, and often, the legal concept of ownership is difficult to convey. As might be expected, the child is likely to run into difficulties in the school where both sharing and respect for property of others are normative behaviors.

The parents, most of whom have a limited education, find it difficult to understand how much their children lose through even a few days absence from school. They understand clearly the importance of an education for getting out of agricultural work, but their economic circumstances prevent them from assuring their children's regular attendance in school. Often, their own bad experiences make them afraid of schools; or they feel that sporadic attendance creates more problems for their children than it solves.

As often occurs with lower socio-economic class children, the migrant child has limited facility with language, especially standard English. Because his mother must work, there is little opportunity after infancy for the one-to-one mother-child relationship, which is considered influential in fostering speech and cognitive development. He seldom hears people speaking articulately and in complete sentences. Printed material is generally absent from his home. The television set, when there is one, is generally second or third hand and in ill repair. Because of these factors, the migrant child lacks the verbal environment and stimulation needed to develop oral speech.

This lack of facility with English (and the problem is compounded for the Spanish speaking) presents severe problems when the child enters school, since reading readiness presumes a facility with the English language as spoken. It is not surprising, therefore, that reading retardation is one of the most frequently occurring academic problems migrant children experience in the classroom.

Moreover, the migrant child often doesn't trust the spoken word. Too often he has seen jobs promised that don't materialize, or objects purchased that don't live up to the expectations the salesman raised. Under such circumstances, he comes early to the conclusion that the spoken word is meaningless. Instead of trusting the spoken word, migrant children often develop a capability for extra-verbally discerning a speaker's feelings and for ignoring what the speaker says.

The perceptivity required for this kind of extra-verbal communication probably has high survival value in the field, but it is of little help to the child in the verbal atmosphere of the school. In the presence of outsiders, which often includes everyone except his immediate family, he tends not to question, or even to express curiosity about the things he sees and does. Even a well-meaning teacher would have difficulty relating to, let alone teaching, such a mistrustful and seemingly disinterested child.

As far as the grower and the crew leaders are concerned, the migrant exists for one reason--to harvest the crop and to move on as quickly as possible. The migrant realizes that the majority culture is contemptuous of the work he performs and that regardless of how self-reliant, honest, and hard working he is, his itinerant status effectively removes hom from becoming part of any community. The migrant is thus isolated from the rest of society and his world tends to be limited to his immediate family.

The children learn early to have two separate responses to the world--one for their families, and one for the "others." There is a striking difference between the warmth and openness the children display towards each other and their families, and the submissive withdrawal they display in other contexts.

Psychological Effects of Mobility. The destructive effects of mobility which are included in the Reul article cited in the previous section are expanded upon at length by Robert Coles in the 1969 Hearings of the Senate Subcommittee on Migratory Labor. Dr. Coles, a Harvard psychiatrist, has spent the last ten years studying how families under severe social and economic stress survive. For seven years, he has focused on migrant farm worker families on the Eastern Seaboard (1969 Senate Hearings, Part 2, The Migrant Sub-Culture, p. 334).

On the basis of his observations, Dr. Coles has concluded that the effect of constant chaotic moving is to leave the children "dazed, listless, numb to anything but immediate survival (op. cit., p. 335). For the migrant population as a whole, he notes that the continual movement, the ever-present threat of chaos, and the cramped living and travel, which contrasts so starkly with the life of others in the society, leaves the migrant feeling not only weak, inadequate, and hard-pressed, but responsible for his fate (U.S. Senate Report No. 91-83, 1969, p. 17).

He further has observed that the migrants are not only rootless, but isolated from the rest of society and essentially stateless. The protective laws providing social benefits such as unemployment compensation, disability benefits, collective bargaining, minimum wage, etc., don't apply to the migrants. Child labor laws and school attendance laws are easily ignored because they are most difficult to enforce. According to Coles, except for the labor he performs, the migrant knows he is not wanted wherever he goes. He learns early to seek out his own kind and to avoid contact whenever possible with the rest of society. The kind of isolation that results has a deleterious effect on the development of a positive self-image and eventually contributes to a high incidence of destructive behavior and psychological disorders (1969 Senate Hearings, Part 2, Migrant Sub-Culture, pp. 452-453).

Coles subscribes to the view that even animals define themselves by the territory they control and that it is inherent in man to need roots and to belong to some place (op. cit., p. 459.) It is perhaps for this reason that Dr. Coles ends up recommending:

> The only...medical and psychiatric way for these children to grow up in even half-way reasonable fashion so far as their mental and physical life, and particularly as far as their mental health is concerned,...would be to end migrancy (op. cit., p. 352).

It is highly unlikely that migrancy can be abolished by a writ. In time, the migrant agricultural laborer may no longer be needed. In the meantime, it would seem prudent to prepare as many migrants as possible to leave the migrant stream and, toward that end, to give top priority to the education of children.

School Attendance. As has been pointed out, a principal distinguishing characteristic of the migrant child's life is movement from one community to another. Movement is constant neither in rate nor direction, due to such factors as availability of work, crop failure, weather conditions, and availability of better paying short-term jobs at non-home base work sites.

The fact of mobility makes it extremely difficult for the migrant child to attend school regularly enough to get an education. According to the NBC White Paper on Migrant Workers presented in July, 1970, 80 percent of all migrant children never enter high school and more than half do not progress to the seventh grade. In a presentation prepared for the Senate Subcommittee on Migrant Sub-culture in July, 1969, Robert Coles commented that his observations of migrant families in the eastern stream led him to believe that, on the average, the migrant child spends about a week and a half in school during a month (1969 Senate Hearings, The Migrant Sub-culture, part 2, p. 384).

A study prepared for the State of Washington Office of Economic Opportunity, showed that, on the average, the migrant child in that state attended school 21 weeks of the school year's 36 weeks. Mexican-American migrant children averaged 17 weeks (1969 Senate Hearings, Part I, Who Are The Migrants, p. 238).

Ordinarily, the children are taken out of school in the spring and do not return until two or three months after the beginning of the fall term (U.S. Senate Report 91-83, 1969 p. 79). On the road, when they attend school at all, their attendance is erratic since so much time of the family is spent in looking for work, or in transit between jobs. Consequently, their progress in school is slow and they tend to drop out early, still almost illiterate and without the background to hold jobs outside of agriculture harvesting.

Not only is the migrant child's schooling curtailed, but his chances for achievement in school are few since he is constantly faced with the problem of adjusting to new schools, individuals, and communities. Only rarely will he attend a school that accepts and welcomes him. He does not have the benefits of the sense of continuity and consistent frame of reference acquired by children, however poor, who are not constantly on the move.

AMERICAN INDIAN SITUATION

The American Indian

The portion of the American Indian population of concern to this study is made up of citizens of Indian extraction living on or near Federal reservations who are eligible by lineage for a variety of services from the Bureau of Indian Affairs. In 1968, the Bureau of Indian Affairs estimated this population to be 452,000.

In testifying before the Senate in 1969, Robert Bennett, then Commissioner of Indian Affairs, reported that half the population was under seventeen (U.S. Senate Hearings before the Subcommittee on Indian Education, 1969, part 1, p. 346). The largest Indian population concentrations are in Arizona, New Mexico, Oklahoma, South Dakota, and Montana; roughly 43 percent live in the Southwestern states.

Throughout this report, "American Indian" is used as if it referred to a homogeneous group. In reality, there are hundreds of tribes, each with a distinctive language and culture. For example, some 300 different languages have been identified; 45 are being spoken still by tribes of more than 1,000 Indians. Nevertheless, the general use of the term will be employed throughout this report, because many tribes share common problems and because a tribe-by-tribe analysis is beyond the scope of the project.

Poverty and Poor Health. Whether the accounting of social and economic ills afflicting American Indians is made by a Presidential Task Force, a Senate Committee, or Ralph Nader, the basic message is the same--the Indians have had and continue to have serious problems.

Approximately 50 percent of the Indian families have yearly incomes below $2,000, three-quarters have incomes less than $3,000. Life expectancy is about ten years less than the United States average of 70.9 years. For the Alaskan native, average expectancy drops to 34.9 years. The infant mortality rate is twice the national average. Housing is generally substandard in spite of extensive building programs. The unemployment rate is estimated at 40 percent, with rates ranging from around 10 percent in Hupah Valley, California, to over 80 percent in some New Mexico areas (1968 Senate Hearings, part 1, p. 5; unemployment data from Economic Development Administration).[4]

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[4] The hearings on Indian education conducted by the Special Subcommittee on Education of the U.S.Committee on Labor and Public Welfare in 1968 and 1969 will be referred to in this abbreviated form throughout this section. Committee reports will be cited by number.

As with the migrants, malnutrition, disease, infection, and other health problems are endemic in many Indian communities. The death rate among Indian children is twice as high as the national average. Tuberculosis rates for Indians are seven times as high as the national average; one in five deaths result from infectious disease. The Report of the Board Into Hunger and Malnutrition cited the American Indians and the migratory farm laborers as the two population groups most severely affected by malnutrition. Protein deprivation is common and is particularly relevant to an examination of causes of education problems since irreversible brain damage in children is known to be linked to the lack of protein in the diet of pregnant mothers and infants. Dietary surveys show marginal intakes of many essential nutrients. For many Indian children, the lunch provided at school supplies over 50 percent of their daily food consumption (1968 Senate Hearings, part 5, pp. 2021-2023).

Testifying before the Senate in 1969, Martha Wilson. Director of the Alaska Native Medical Center, cited hearing loss as a major disability interfering with the education of native children in that state. She reported that up to one-third of the Alaskan native school children suffer acute infections during infancy and early childhood which may permanently impair communication ability and learning capacity (1969 Senate Hearings, part 1, p. 495).

As with other disadvantaged groups, "mental health" problems are widespread and have been the subject of extensive research. Excessive drinking and suicide are major problems. On one Central Plains reservation, 44 percent of the men and 21 percent of the women had been arrested at least once for an intoxication-related offense in a three-year period. Thirteen percent of the juvenile population (15-17) had been arrested at least once on a similar charge. In 1960, 71 percent of all Indian arrests were accounted for by drunkenness alone (Senate Report No. 91-501, 1969, p. 18). The Senate Subcommittee found suicide rates of epidemic proportions in the Northwest and high suicide attempt rates in South Dakota and the Southwest (op. cit. p. 17).

Numerous studies have shown that among modern Indians, attitudes of "alienation, hopelessness, powerlessness, rejection, depression, anxiety, estrangement, and frustration" are common (Berry, 1969, p. 66). The presence of such conditions is particularly relevant to this study because of the link between a student's sense of self-esteem and his academic performance. According to the Coleman report, Indian students, like the Spanish speaking minorities, feel that their own efforts have relatively little to do with their own success or their future roles. This same report indicated that the extent to which a pupil feels in control of his own destiny has a greater impact on school achievement than do all the in-school factors combined (Coleman, 1966, p. 23).

Overview of Existing School System

In 1969, some 178,476 Indians between the ages of 5 and 18 enrolled in school. About two-thirds of them attended public institutions located in and administered by communities adjacent to the reservation. Twenty-nine percent attended boarding or day schools operated by the Bureau of Indian Affairs (BIA) in the Department of Interior, the remainder attended mission and other schools. These proportions have been fairly constant over the last 10-year period, as Table 3 indicates. Total school population is increasing, however. Between 1959 and 1969, enrollment increased by 39 percent with the largest gains occurring in the public schools. Furthermore, since the Indian birth rate is slightly more than double the national average, the school-age population can be expected to continue to expand fairly rapidly in the immediate future (1969 Senate Hearings, part 1, p. 130).

Abt Associates[5] estimated that in 1980, public school enrollment would be 182,000 while the BIA school population would be 74,000. These estimates assume a population growth of 3 percent and no change in the present retention rate. Their "low" estimate, based on the assumption of a reduced birth rate, was 154,000 for public schools and 57,000 for BIA schools (Abt, Vol. II, 1969, pp. 90-91).

Almost half of the total Indian enrollment in public schools in 1969 consisted of members of the "Five Civilized"[6]

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[5] In June, 1969, Abt Associates submitted a five-volume report to the Bureau of Indian Affairs which was based on a full-scale analysis of the entire Indian education system. The investigators visited a sharply defined sample of 200 classrooms and interviewed some 400 students, teachers, parents, and administrators.

[6] This name was applied in the nineteenth century to the Choctaws, Chickasaws, Creeks, Cherokees, and Seminoles because of their rapid adoption of the whiteman's civilization. They were farmers, stock-raisers, and even slave-owners (the last Confederate general officer to surrender was a Cherokee). They codified their laws, published a newspaper, adopted a formal constitution and legislature, and by the 1880's were running a secondary and higher education system that was considered one of the best in the country (Josephy, 1969, p. 351).

Table 3

SCHOOL ENROLLMENT OF INDIAN CHILDREN BY TYPE OF SCHOOL: FY 1969, 1968, 1965 and 1959[1,2]

	YEAR			
School Type	1969	1968	1965	1959
Total, All Schools	178,476	142,630	134,064	131,927
Public Schools	119,123	87,361	82,302	81,098
Federal Schools	48,789	46,725	43,088	38,165
Other Schools	10,564	8,544	8,674	12,664

[1] Enrollment data based on agency census records.

Source: USDI, Bureau of Indian Affairs, Office of Education, Statistics Concerning Indian Education (for Fiscal years 1969, 1968, and 1959).

[2] These data understate the actual number of Indian children enrolled in school. In 1961, the BIA dropped from its school census those Indians in the states of California, Idaho, Michigan, Minnesota, Nebraska, Oregon (except those at Chemawa on the Warm Springs Reservation), Texax, Washington, and Wisconsin. Moreover, the BIA has never counted several of the eastern tribes such as the Lumbees of North Carolina. Thus, there are thousands of Indian children attending schools who do not show up in the official school census.

tribes in Oklahoma and Arkansas, Navajos from Arizona and New Mexico, and Alaskan natives (Aleuts, Eskimos and Indians). The BIA encourages public school attendance on the grounds that Indian children become better adjusted to "living with all people in a community when they associate with other public school students" (U.S. Department of Interior, Bureau of Indian Affairs, Statistics Concerning Indian Education, 1969, p. 2).

Some 49,000 Indian children attend 223 Federally operated boarding and day schools. Of these, more than 12,000 attend 19 off-reservation boarding schools. The principal objective of the Federal schools is to provide students with a basic educational background needed for "successful living" (op. cit., p. 1). Day school placement is preferred, but because of a lack of roads usable in winter, many students living on reservations are enrolled in boarding schools. The majority of those attending the off-reservation boarding schools are doing so because they are so educationally retarded that they cannot benefit from public school placement, or because they have dropped out of public schools, or because they require boarding care due to social, economic, or psychological problems in their homes (1968 Congressional Hearings, part 2, p. 614).

Roughly one-fifth of all Indians enrolled in school attend Federally operated boarding schools.[7] Eighty-two percent are "Full-Blood" Indians and, therefore, probably the least assimilated of all Indian students and the group for whom cross-cultural pedagogical techniques might be most appropriate. However, except in isolated instances, notably at Rough Rock, few schools are operating as bi-cultural institutions.

Almost 64 percent of the students in the 77 Federally operated boarding schools live in the Navajo administrative area, which covers Arizona, New Mexico, Utah, and a small part of southern Nevada. Twenty-two of the 49 boarding schools in the area enroll students from the beginner level to the fifth grade or less. In 1967, there were 7,476 Navajo children under the age of nine in boarding schools (1968 Senate Hearings, part 1, p. 78). The boarding schools will be discussed further in a later section.

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[7] A more precise ratio cannot be calculated since the data on total enrollment, including public school enrollment, is based upon agency census records and the Federal school enrollment data are based on school attendance records.

In addition to the boarding schools, the BIA operates 146 day schools, half of which are in Alaska. The proportion of boarding and day students in BIA schools has remained relatively constant over the last ten years (see Table 4).

Table 4

ENROLLMENT IN SCHOOLS OPERATED BY THE BUREAU OF INDIAN AFFAIRS: FY 1969, 1968, 1965, and 1959

	YEAR			
School Type	1969	1968	1965	1959
[1]All Federal Schools	52,471	51,558	48,003	41,182
Boarding	32,263	35,309	31,662	25,173
Day	16,100	16,139	15,977	15,663
Hospital	108	110	364	246

[1] Enrollment data based on school attendance records.

Source: USDI, Bureau of Indian Affairs, Office of Education, Statistics Concerning Indian Education (for fiscal years 1969, 1968, 1965, and 1959).

Not all school-age Indian children attend school. According to the 1969 BIA school census, there were some 12,507 children apparently not enrolled in school. The status of another 8,000 was not known. In a 1967 study which covered only a small part of southern Arizona, Kelly found some 900 students under the age of fifteen not in school. In the Navajo area, the estimate of children not enrolled in school runs from 4,000 to 8,000 (Senate Report No. 91-501, 1969, p. 59).

Financing of Schools. Federal, state, and local governments finance the education of Indian children. By law, federal funds are generally limited to paying for the schooling of children who live on or near reservations and who have at least one-fourth Indian blood. Eskimos, Aleuts, Alaskan Indians, and Indians under Cherokee Agency jurisdiction with less than quarter blood also qualify for federally aided education.

The states have assumed responsibility for roughly two-thirds of the school-age Indian children. Because large numbers of Indian children and extensive tax-exempt Indian lands create financial burdens for local school systems, federal funding is made available under the Johnson-O'Malley Act of 1934, Public Law 81-815 (School Facilities Construction Act) and Public Law 81-874 (The Federally Impacted Areas Act) to help alleviate some of the problems of operating a school district with an inadequate tax base. These funds are not made directly available to students or their parents, but to the public schools enrolling Indian students (Senate Report No. 91-501, 1969, p. 39).

The Federally Impacted Areas Act is considered "in lieu of taxes" legislation and provides money to school districts in which tax revenues are reduced by the presence of Federal property, in this case, the reservation. The cost of education in comparable communities and the residence or place of employment of the student's parents determine the amount of payment.

Under the School Facilities Construction Act, minimum school facilities can be constructed for Indian children, if it is determined that the district has insufficient resources to construct the facilities needed.

The Johnson-O'Malley Act (JOM) funds are supposed to be used to provide special services to Indian students, but these services need not be educational services. Ofen, JOM funds are used to provide transportation, hot lunches, administrative costs, as well as special instructional services. About one-fourth of JOM funds are used for lunch programs. A district is not eligible for JOM funds until a district's eligibility for impaced area funds (P.L.874) has been determined. According to the Senate Subcommittee staff report:

> "...JOM money is now used primarily as a budget-balancing device to make up the difference between a school district's expenditures and revenues after Public Law 874 money has been added" (op. cit., p. 34).

In 1969, the Bureau of Indian Affairs obligated some $97.4 million for education. About 84 percent was allocated to Federal facilities, with 64 percent earmarked for the operation of the boarding schools. The data on Table 5 provides a sense of the general magnitude of expenditures.

Educational Achievement. The schooling afforded Indian students is generally of poor quality; their educational attainment is low. According to the 1969 Report of the

Table 5

OBLIGATIONS FOR EDUCATION BY THE BUREAU OF INDIAN AFFAIRS
FY 1965-1969

($ In Millions)

OBLIGATION CATEGORY	FY-1965	FY-1966	FY-1967	FY-1968	FY-1969
Assistance to Pupils in non-Federal Schools:					
Public Schools:					
Navajo peripheral....	1.355	1.399	1.561	1.604	1.618
Other (JOM Funds)....	6.440	7.185	7.948	8.336	9.920
Higher Education.......	1.242	1.389	1.913	2.246	2.949
Federal Facilities:					
Boarding schools.....	45.225	48.764	54.795	58.133	62.608
Day schools..........	11.297	12.174	13.092	13.993	15.289
Program direction....	1.969	1.746	1.817	2.024	2.263
Transportation of students...........	.789	.769	.892	.914	1.070
Summer program.......	.835	.942	.950	.959	.504
Adult Education........	.980	1.031	.681	1.037	1.176
Total.....	70.135	75.399	83.649	89.246	97.397

Source: U. S. Department of Interior, Bureau of Indian Affairs, Office of the Associate Commissioner.

Special Subcomittee on Indian Education:

> Forty thousand Navajo Indians, nearly a third of the entire tribe, are functional illiterates in English;
>
> The average education level for all Indians under Federal supervision is five school years;
>
> More than one out of every five Indian men have less than five years of schooling;
>
> Drop-out rates for Indians are twice the national average;
>
> Only 18 percent of the students in Federal Indian schools go on to college; the national average is 32 percent;
>
> Despite a Presidential directive two years ago, only one of the 226 BIA schools is governed by an elective school board (Senate Report No. 91-501, pp. 12 and 13).

Studies reported by Selinger in 1968 and Owens and Bass in 1968 indicate that around 10 percent of the Indians in the eighth grade do not go on to high school. Of those that continue, 40 to 60 percent drop out before graduation (Edington, 1969, p. 6). The Senate Subcommittee mentioned earlier reported drop-out rates as high as 90 percent in Alaska and Oregon public schools (U.S. Senate Report No. 91-501, p. 29).

Excessive drop-out rates are reported even in areas which have been enrolling Indian students in public schools for long periods of time. One school in Western Oklahoma with a student body that is one-fourth Indian has graduated only 11 Indians in the last forty-year period (op. cit., p. 30).

An even more serious indicator of educational deficit is the fact that Indian students typically fall farther and farther behind their white counterparts the longer they stay in school. In 1965, the achievement tests administered by the Coleman report investigators indicated that American Indian first grader's median test scores in the non-verbal area were 1.1 test points below those of majority culture students and their verbal area scores were 5.4 points below. For 12th graders, the difference increased to 4.9 points in non-verbal scores and 8.4 points in verbal areas (Coleman, 1966, p. 20). The differential between the highest scoring group--white students in metropolitan schools in the Northeast--and American Indians is even more marked. At the 6th grade level, the American Indian lagged behind 1.7 grade levels in verbal ability and 2 grade levels in reading comprehension and mathematics. In the 12th grade, the lag increased to more than 3 years in each area (op. cit., pp. 274-275).

While testifying before the U.S. Senate in 1969, Ralph Nader introduced revised Coleman report findings which showed:

> "Of the different minority groups, it is the American Indian whose verbal and national average reading scores show the largest decrease in relative standing over the grades, which shows that the training they receive does not allow them to maintain the relative standing among other groups with which they begin school" (1969 Senate Hearings, part 1, pp. 55-57).

Edington, in surveying the literature on American Indians' academic achievement, found the Coleman conclusions which showed that Indians score lower on achievement tests than do their counterparts in the general population, and that the achievement gap widens as the Indian student progresses through school corroborated by several other researchers. He noted particularly the studies of Coombs and Townsend which showed the reading scores of Indian students entering high school to be nearly five years behind those of white.

Special Factors Affecting Academic Performance

The economic deprivation which characterizes the lives of the majority of American Indians contributes to both physical and mental health problems. Poverty does have a deleterious effect upon the academic performance of American Indian school children just as it does with other impoverished groups. However, since the socio-economic status of the student is a factor upon which the school alone can have little immediate, direct impact, predominantly poverty-linked factors will be conceded, but not explored at length. Instead, the focus will be put upon other special factors in the American Indians' circumstances which the schools might take into account in devising means to better address the needs of American Indian students.

The Language Barrier. It is estimated that 2 out of 3 Indian children do not know English when they enter school. On the Navajo reservation, the estimate runs to 90 percent (U.S. Senate Report No. 91-501, p. 55). Nevertheless, most schools which Indian students attend use English as the language of instruction, even in the primary grades. Few teachers are trained to teach English as a second language, even in the BIA schools. Furthermore, since roughly two-thirds of all American Indian students are enrolled in public schools, most Indian students are at a decided disadvantage in the classroom situation where performance standards are set by the Anglo students.

Some experts feel language problems account for the Indian students' difficulties; others regard them as a contributing factor, not the cause. In a 1966 study, Miles Zintz asserted that since 90 percent of elementary school activity consists of reading and writing, half the pupils in a state like New Mexico labor under a considerable handicap as they attempt to perform in a bilingual situation (Berry, 1969, p. 56).

Grace Blossom hypothesizes that language barriers account for Indian students' cumulative deficits in academic achievement. She notes that Indian children often progress satisfactorily until the fourth grade and then their performance begins to deteriorate. She explains this phenomenon by suggesting that textbooks used in the first three grades are written in a carefully controlled "talking" vocabulary while the upper grade texts shift to a comprehension vocabulary (Ibid.).

Psychiatrists interested in Indian education advocate teaching children in their own language initially because of the importance of language in identity development. For example, Karl Menninger testifying before Congress in 1968 stated:

> "Teaching children in their native tongue before attempting to teach them another language is extremely important because it helps to establish the identity of the child which can be changed gradually later if there is an indication for such change."

Dr. Menninger feels that the child's language is an integral part of himself and that any devaluing of the language (such as forbidding the use of the Indian language) will be perceived by the child as a reflection on his own worth. According to Menninger, the child must be proud of what he is in order to develop the self-esteem needed to engage in purposeful activity leading to accomplishment (1968 Senate Hearings, part 5, pp. 2136-2145).

Cross-Cultural Conflicts. The conflicts between the dominant Anglo culture and the Indians' tribal cultures are frequently considered the basic cause of the overall "Indian problem" as well as the Indian education problem. Explicitly or implicitly, the goal of educating Indians always has been to assimilate them into the Anglo society. Indians recognize the importance of knowing English and acquiring skills marketable in an industrial society; they expect schools to help them develop these proficiencies. But many are unwilling to give up their tribal identities, their value systems, and their own way of life (Josephy, Alvin, 1969, p. 7).

The psychic cost of resisting assimilation and yet trying to survive in twentieth century society has been great. It is frequently contended that many Indians are forced into alienation by the attempt to fit themselves into the American urban industrial mold while maintaining allegiance to their own people. Whether in the reservation school or in the local public school, students are required to choose between traditional tribal and family values and those of the school. There are negative consequences whatever the choice. Some make no choice and eventually become alienated from both societies.

In surveying the literature on American Indian education, Berry found it possible to suggest some generalizations about Indian values even though he was analyzing the commentary of scholars who stress the uniqueness of each tribe and the differences among individuals within a tribe (Berry, 1969, pp. 52-55). His review suggests a number of rather common characteristics. Clearly, not every Indian has each characteristic; however, Berry considered the characteristics pervasive enough to state them generally (paraphrased and amplified from other sources below).

> Indians, regardless of tribal group, avoid asking for advice or correction from others, avoid coercion, and do not ask favors. They do not interrupt and tend to remain silent until a situation is thoroughly understood.
>
> They place a high value on being sensitive to the feelings of others and upon generosity. They have little concern for the accumulation of personal wealth. This "Indian way" of sharing one's wealth rather than conserving it for future needs is itself a source of friction between Indian and Anglo societies.
>
> Another aggravating factor to Anglos is the Indians' lack of time-consciousness (the Sioux do not have a word for time) and their difficulty in accepting the importance placed upon the clock in the Anglo society. They are primarily concerned with the tangible

> realities of the present and have little regard for planning for the future. They do not accept the idea that hard work is intrinsically valuable, though they are quite willing to devote themselves to a task for long periods of time to meet an immediate, specific need.
>
> They are basically group-oriented and not given to seeking recognition on an individual basis. They prefer to seek harmony with nature rather than mastery over it. Possibly because they tend to fear the world as dangerous, they feel dependent upon a supernatural power.
>
> In spite of the dominant role played by the group, individual autonomy is valued highly. Even children in many tribal cultures are free to determine their own activities. This, of course, creates problems when the children attend school where the pupils are expected to follow directions, required to conform to a rigid schedule, and allowed to make few decisions of their own.

Generally, Indian child-rearing practices appear extremely permissive and non-punitive. Physical punishment is an exception. Teaching by example is preferred to teaching by admonition. Shaming by the peer group is a common method of social control. Havighurst and Neugarten have noted "Southwest Indian children exhibit far less conscience or super-ego function than do Midwest white children --rather they have a self-consciousness or sense of shame of public disapproval" (1969 Senate Hearings, part 2, p. 1626).

In many Indian cultures, adults are seen as helpers rather than authority figures. Children are expected to be able to ask for and obtain what they need, and in turn, to be generous with what they have when others are in need. This pattern of inter-dependence complicates classroom interaction since the students, taught from infancy to be attentive to others' needs and to expect reciprocal treatment, often engage in behavior that is construed as cheating. Moreover, they construe the teachers' approval or disapproval as a sign that she likes or dislikes them. They do not readily separate the teacher as a person from the teacher-role.

Many social scientists have observed that a number of behavioral traits acceptable to Indians are an anathema in the school situation. For example, according to Deward Walker of the University of Idaho's Sociology-Anthropology Department, Indian children are very sensitive to the reactions of their peers and know that distinguishing oneself on an individual basis through competition with others is considered improper. Therefore, because of their reluctance to draw attention to themselves as individuals, they avoid classroom recitation even if they know the material and could respond correctly.

However, the teacher, whose expectations and methods are based on Anglo classroom behavior, relies on oral questioning of students to focus attention on the lesson and to determine if she is communicating. When confronted with a class of silent pupils who will not respond as expected and who seem to resist every effort made, the teacher understandably becomes frustrated. Often, according to Walker, the students conclude they are to blame for the teachers' anger, although they are behaving in ways that are normal, natural and correct for them. This self-blame for the teacher's discomfiture has a deleterious effect on the pupil's self-respect and motivation to learn (1968 Senate Hearings, part 5, pp. 2002-2006). The loss of the desire to learn and of the feeling of incompetence in learning situations in itself contributes to an atmosphere not conducive to learning.

Descriptions of the learning styles of many different tribes strongly support the proposition that Indians are not motivated to learn by the desire to distinguish themselves as individuals. According to Father Bryde, who for many years has headed the Holy Rosary Mission School on the Pine Ridge Sioux Reservation in South Dakota, Indian children are taught to be unobtrusive and to adjust to the group (1968 Senate Hearings, part 1, p. 35). If they compete, it is for the group, not for themselves as individuals. In studying Pueblo Indian children, Zintz noted a disparity between the pupils' values and those of the teachers. The Pueblo pupils valued "harmony, present time orientation, maintenance of the status quo, anonymity, and submissiveness" while the teachers prized "mastery, future time orientation, competition and success, individuality and aggression" (1969 Senate Hearings, part 2, p. 1635).

On the basis of their field observations, McKinley, Bayne, and Nimnicht have concluded that Indian students seem to do best on self-directed and self-initiated projects. Typically (in a situation where his preferences are taken into account), the Indian child spends a long period of time observing and avoids making premature clumsy attempts, because failure will be met with ridicule by his peers. He prefers learning activities in which interaction with the teacher is minimal and limited to individualized supportive assistance. Ordinary classrooms which rely on lecture, drill, class discussion, and competition among students do not fit this style of learning (1969 Senate Hearings, part 2, pp. 1636-37).

Typically, academic tasks are of secondary importance to the nature of the student-teacher relationship and the classroom interaction pattern. Social relationships both define the learning situation and provide its rewards. The teacher is perceived as a potentially moral authority and guide for helping students develop competency in social relations. All too often, the instructor cannot effectively convey to students the feeling that their autonomy is respected and is unable to create the balanced, harmonious relationship regarded in the Indian culture as essential to the teaching-learning transaction (1968 Senate Hearings, part 2, pp. 877-893).

John Belindo, Executive Director, National Congress of American Indians, testifying before the Senate Hearings on Indian Education in 1969 sums up rather well the ultimate effect of the conflict between the Indian and Anglo culture. He states:

> ...in the field of education, it is not improved technique that is required, but a need to encourage the Indian child to greater self-fulfillment. Neither the public school nor the BIA schools have understood this principle, and the result has been, in most instances, a hostile and alienated Indian child, forced to change his cultural heritage for that of the dominant culture, or fail... A variety of techniques have been historically tried in Indian education, but only in those rare instances where Indian cultural values have been taken into account has there been any measure of success. In most instances, whatever the techniques, the object of the program has been to degrade Indian cultural values. Thus such programs have failed (1969 Senate Hearings, part 1, p. 506).

Community Relationships. Community attitude studies summarized in the Berry review of the literature indicate that relationships between Indians and their surrounding communities most frequently are less than cordial. Whites in close contact with Indians generally regard them as biologically, morally, and culturally inferior. Investigators have found that such opinions are internalized by Indians themselves (Berry, 1969, p. 68).

Researchers from the Senate Subcommittee on Indian Education frequently heard the children describe themselves as "dumb Indians." According to their 1969 report:

> A survey of Oglala Sioux High School students in South Dakota found a majority of the Indians expressing negative attitudes toward Indians.

> "Indians have greater problems because they're real stupid," one student said. Ironically, a majority of white students who have contact with the Oglala Sioux students blames discrimination on the part of their own ethnic group as the major reason for Indians having problems (Senate Report No. 91-501, p. 29).

The fact that substantial racial prejudice continues to exist has caused some critics to question the validity of public school education for Indian students. In a paper prepared for the Senate Subcommittee on Indian Education in 1968, Herbert Striner, former member of a Presidential task force on Indian education, noted:

> The assumption that integrated education is invariably better than segregated education must be qualified by a careful assessment of local circumstances in Indian country before it can be accepted as valid. It would not appear to be valid under present circumstances in many areas (1968 Senate Hearings, part 2, p. 614).

Schools and Teachers. Thus far, this exposition has centered on characteristics of the Indians rather than on school system problems. However, the schools themselves have problems which contribute substantially to the shortcomings in American Indian education. Attracting and keeping teachers capable of performing in a cross-cultural situation is not easy even in cities, let alone on remote, isolated reservations.

Teacher turnover, though about 75 to 100 percent higher in Bureau of Indian Affairs schools than for the nation as a whole, is roughly comparable to that in public schools located in sparsely settled states such as Montana, Idaho, and Alaska. Teachers with less than two years experience account for half of the turnover; 40 percent occurs among those who have had only one year of experience. Half of the teachers leave for economic reasons and because of the effects of isolation (1968 Senate Hearings, part 1, p. 330).

Many teachers object to BIA policies which they interpret as unnecessarily rigid and authoritarian. They also resent their 12-month schedules which prevent them from attending summer school, working, or vacationing as teachers in the public schools may do (1968 Senate Hearings, part 4, p. 1546).

The instructors tend to be very young or very old. The young are usually recent college graduates, often from Eastern colleges. Many of the older ones have retired from public school teaching and have lived in Indian areas for a long time. Most are graduates of small state teachers' colleges. The Bureau of Indian Affairs requirement that teachers hold bachelors degrees substantially reduces the number of Indians teaching in schools attended by Indian children. Few Indians graduate from college, and of those that do, few want to return to the reservations. In fifty years, Alaska has produced only five native teachers (1969 Senate Hearings, part 2, p. 1622).

Teacher Attitudes. It has been frequently charged that the Indians' low level of academic achievement is the direct result of the teachers' attitudes toward their Indian students. It is well recognized that instructors' expectations significantly influence student performance. Many observers of Indian schools have noted a vicious circle of low expectations and low standards. Teachers, inexperienced in educating Indians but familiar with middle-class schools, are confronted with students who are not fluent in English, behave in unexpected, unacceptable ways, and who are confused and uncertain about their place in white American society. Unless teachers have mastered the sophisticated subtleties of effective cross-cultural teaching, they cannot cope unless they lower classroom achievement standards to levels they feel the children can meet. The circle is then completed as the children meet only the lowered educational goals, thereby reinforcing the teachers' low standards and assuring low achievement levels (1969 Senate Hearings, part 2, pp. 1645-1646).

During the summer of 1967, Stephen and Judith Bayne visited the Navajo, Papago, and Hopi reservations in Arizona in an attempt to ascertain the attitudes of teachers and tribal leaders. They interviewed 76 teachers at the 25 schools as well as the tribal leaders most involved with education on each of the three reservations.

The teachers varied from young couples who were intent on learning from the Indian community as well as teaching children in the best and most sensitive ways they could, to teachers retired from the public school systems who denigrated both Indian culture and the students' intelligence, and who perceived their basic mission as instilling Protestant morality in the natives. The Baynes noted that the latter type predominated.

Only 11 percent of the sample of 76 teachers had any preparation in cross-cultural teaching. Only 13 percent were Indians. Approximately 14 percent were 60 years of age or older. The instructors who were most enthusiastic about their classroom progress tended to be those who understood and appreciated Navajo life.

The Baynes also found indicators of a high teacher turnover rate. On the average, the teachers did not remain in one assignment more than two years. The attrition rate was especially high among the young couples who came to the reservation seeking the challenge of creative cross-cultural teaching. Their primary complaints were that BIA did not treat them as professionals and exercised too much control over curriculum. They particularly resented surprise visits to classrooms by BIA administrators and the requirement to remain at their posts during the summer. Those interviewed felt the ten-day orientation session conducted by BIA was inadequate preparation for teaching a Navajo classroom.

Some of the teachers considered the isolation a great hardship. Within the tiny BIA communities, relationships were often forced and excessively close. Because of the lack of roads, shopping and entertainment facilities were not accessible. Without provision for rest and recreation, many teachers found they did not have the internal resources needed to remain in what was to them, essentially an alien land (Bayne, Stephen and Judith, 1969, pp. 2-4).

The Abt Associates researchers who visited a broader sample of schools were equally pessimistic about the attitudes of the teachers in Indian schools. In spite of the fact that most of the students aspired to some college training and wanted a firm grounding in English, mathematics, and science, most of their teachers had a lower regard for academic achievement and stressed instead personality development, socialization, and citizenship. Apparently, many teachers still perceive their role as "civilizing the native." The Abt researchers seemed to feel that this lack of teacher interest in intellectual stimulation was a primary cause of the lack of student motivation and achievement (Abt, 1969, Vol. II, pp. 48-60).

School Control. With the rare exceptions, notably Rough Rock at Chinle, Arizona, the schools of Indian children are not controlled by Indians. The Bureau of Indian Affairs operates the Federal schools, and the public schools which most Indian students attend are run by local school boards. As a result, there is ordinarily little sensitivity to the special needs of Indian students.

The charge has been made that Indian parents do not even have a voice in determining whether their children shall attend Indian schools or public schools. This is a particular source of rancor since Indian students transferring from the reservation schools to the public schools are ordinarily ill-equipped linguistically, academically, and socially to cope with the public school environment.

Neither the Senate Special Subcommittee on Indian Education nor the Abt Associates field team (who were retained by the BIA to analyze Indian education) could discover systematic implementation of the BIA policy of encouraging public school enrollment. Evidently, such factors as the students' or parents' wishes, and the public schools' preparedness to handle the problems of bilingual students attempting to bridge the gap between their own culture and that of the dominant society, are not taken into account. Furthermore, the Senate Special Subcommittee on Indian Education found that many school administrators and other members of the community are convinced that Indian parents aren't interested in their children's education.

This viewpoint is diametrically opposite of that held by the increasing number of tribal and multi-tribal organizations of Indians. The Senate hearings are replete with statements of Indian spokesmen demanding control of the institutions educating their children. Furthermore, every recent major study concerning Indian education problems has recommended that the Indians themselves be substantively involved in the management of the schools their children attend.

It is now Federal policy to encourage Indian self-determination. On July 8, 1970, President Nixon recommended legislation that would enable a tribe, group of tribes, or an Indian community to operate Federally funded and administered programs in the Department of Interior and the Department of Health, Education, and Welfare. Such legislation may well be the means whereby the Indian communities themselves are able to effect the meaningful reforms needed in Indian education.

Boarding Schools. Most of the diatribes on the failure of Indian education to prepare Indian students for a full-fledged productive role in society focus upon the boarding schools. The boarding schools are regularly castigated for being cruel and inhumane. Even temperate critics describe them as regimented, sterile, and impersonal. They are regarded, at best, as a necessary evil and the only feasible means of educating a geographically disperesed group whose physical and educational needs are not likely to be met in any other way. On the other hand, the Abt Associates researchers who visited 23 BIA boarding schools in 1968 found strong indications that Indian adults favored the boarding schools. According to their report:

> In the environment of rural poverty which characterizes most Indian reservations, the BIA schools offer better housing and food to the children than all but a few enjoy in their parents' homes. Parents and students alike are aware of this benefit (Abt Associates, Vol. II, 1969, p. 65).

Psychiatrists who have studied Indian problems generally regard the boarding schools as destructive. Karl Menninger and Robert Leon have recommended their abolition

(Senate Report No. 91-501, 1969, p. 71). Dr. Robert Bergman noted that the boarding school experience has had a negative effect on the Navajo family and social structure as well as on the children now in the system. Many social problems--drunkenness, child neglect, reckless driving, and an alienated, apathetic life style--are found with excessive frequency among the first generation of Navajo boarding school graduates. Many mothers among this group reject their nurturing role and feel that some institution should take care of their children. Bergman surmises that because they themselves were reared in an impersonal situation where they had little or no opportunity to care for other children or even of themselves, they have become alienated from their mothering role (1968 Senate Hearings, part 3, p. 1126).

The boarding school atmosphere is still regularly compared to a prison or an army barracks. Extreme regimentation pervades. Rarely is any provision made for individual privacy; ordinarily, students are not allowed to individualize their living space. Major emphasis is placed on keeping students out of trouble through strict disciplinary measures. The lack of varied social and recreational activities indicates little understanding of the subtler forms of social control (Abt Associates, Vol. II, 1969, pp. 67 and 68).

The academic performance of boarding school students is inferior. Forty percent drop out before graduation; of those that do graduate, many have little better than ninth grade proficiency. Only 28 percent of those who complete high school go on to college, and only 3 percent of these graduate (Senate Report No. 91-501, 1969, p. 13).

The quality of instruction in the boarding schools is low; teachers are generally untrained for cross-cultural teaching; the curriculum is generally inappropriate to the students' background and aspirations. In spite of the emphasis and recognition of the importance of teaching English as a second language, few schools at present are conducting their language instruction programs accordingly.

Furthermore, the schools are underfunded. The Senate Special Subcommittee on Indian Education found that the Federal school were spending only $18 on textbooks and supplies per child compared with a $40 national average (Senate Report No. 91-501, 1969, p. 58). Moreover, the $1,100 expended per child included the cost of boarding. The Job Corps spent $7,000 to $9,000 per student year for its resident high school operations (op. cit. p. 56).

Most teachers and the schools set low educational goals for their students and apparently are operating on the assumption that the Indians must decide to live in poverty on a reservation or totally assimiliate into the white society. Directing the students toward life off the reservation is an accepted aim, yet the boarding schools do not provide the vocational training necessary for matching pupils to existing job markets. Neither do educators perceive the expectations of a large number of students to obtain college and post-graduate education. Socially, psychologically, or vocationally then, the boarding school students are prepared inadequately for urban life (Abt Associates, 1969, Vol. II, pp. 65-67).

Even though there is general agreement that boarding schools have a deleterious effect on the emotional, intellectual, and social development of young children, they are still regularly placed in these institutions. In 1967, on the Navajo reservation alone, 7,476 children under the age of nine attended 48 elementary boarding schools. Alaskan natives are still being sent to Oklahoma and Oregon boarding schools despite parental resistance. The BIA justifies use of the schools on the basis of lack of roads and transportation on reservations. Yet, Senate Subcommittee researchers found that more than two-thirds of the students live within 25 miles of their school (Senate Report No. 91-501, 1969, p. 70).

The majority of the off-reservation boarding school students are considered socially and/or psychologically maladjusted. Many have been sent to these schools as an alternative to reform school. But, the schools do not operate therapeutic facilities. The ratio of guidance counselors to students is 1:600. Dormitory aides, who could be parent surrogates, cannot function in this capacity when typical aide-student ratios are 1:100. Psychologically, dormitory aids are the most important people in the school setting since they are closest to the students. Yet, they are at the bottom of the institutional hierarchy and are apt to over-interpret directives from their superiors in order to appear competent. For example, many aides continue the now discredited practice of punishing children for speaking their native language because of the directive to encourage the use of English (1968 Senate Hearings, part 3, pp. 1121-1127).

Boarding schools are located in Indian communities, but they are not community facilities, nor are they controlled by Indians. Some schools discourage parental visits; teachers and school administrators rarely visit students' homes. An activity that might be interpreted as "going native," is discouraged.

Many BIA boarding school administrators have been recruited from the field of land management. Because of their background, they tend to be unfamiliar with and somewhat insensitive to educational considerations. In their field work, Abt Associates researchers found indications that BIA personnel, from administrators to dormitory aides, frequently neglect their responsibilities, either from frustration or cynicism.

Representatives of the Indian communities, even the few who are organized, have little effect on the operation of the schools. Since the BIA teachers and administrators have Civil Service status, teacher selection, training, performance, curricula, and educational philosophy are all beyond the purview of the local community.

Moreover, the schools are not used for adult education programs in spite of the fact there are some 75,000 Indian adults who do not have a fifth grade education. In 1968, only about 3,500 were enrolled in any type of adult education program.

The boarding schools, despite their recognized faults, are likely to continue to exist, because of the lack of viable alternatives acceptable to all concerned.

THE INNER-CITY POOR SITUATION

The Inner-City Poor

There is no clear-cut definition of the inner-city poor. There are no legally established blood-ratios or geographic boundaries which demark those who are to be included and those who are not, as with the Indians on the reservations. The slum-ghetto, or the inner-city, by definition exists within the legally defined parameters of large cities and is characterized by sub-standard living conditions. The attitudes of the dominant society combine with the perceptions of slum-ghetto residents to isolate these people from job opportunities, medical services, adequate housing, shopping facilities, and other amenities available to more affluent urbanites. Although the situation is changing, slum-ghetto residents do not fully participate in the processes of self-government and have little control over the institutions affecting them.

The inner-city poor, then, can be defined as those who live in generally sub-standard housing within the central city of a metropolitan area and who are functionally isolated from most public and private institutions.

According to a 1966 survey, the racial composition of urban "deep poverty" areas was, on the average, "70 percent ...Negro, 10 percent...Puerto Rican, 8 percent...Mexican-American, and 12 percent...other." Since 1966, the proportions may have altered, but the configuration remains essentially the same (U.S. Department of Labor, Manpower Report of the President, 1967, p. 76).

Poverty and Poor Health. Like the Indians and the migrants, inner-city residents are poor. According to the Department of Labor, the average annual income for a Negro family in the central city was $6,600 in 1968. White families in large cities averaged $9,300 annually (U.S. Department of Labor, BLS Report No. 370, October, 1969). In dollar terms, the migrants and the Indians are much poorer. However, the inner-city residents' economic problems are confounded because the costs of goods and services in the core city are generally greater than they are elsewhere (Alman in Cowles, 1967, p. 7).

A relatively high proportion of the inner-city poor participate in the labor force (i.e., are actively seeking jobs, or are employed). The 1969 Department of Labor statistics on labor force participation for the central cities of the twenty largest Standard Metropolitan Statistical Areas, showed the participation rate for Negro men was about three percent higher than for white men; the rate for Negro women was about ten percent higher than for white women. However, unemployment rates for the Negro workers are comparatively high.

The Department of Labor estimated the 1969 unemployment rate for Negro workers living in the central cities of these SMSA's at 6.2 percent. For Negro labor market participants under twenty, the unemployment rate was 26.1 percent. The 1969 jobless rate for white workers living in central cities was 3.2 percent and 2.9 percent for those living in the suburbs. The unemployment rate for white labor force members under twenty was 9.8 percent during 1969 (U.S. Department of Labor, Bureau of Labor Statistics, April 6, 1970 news release). Unemployment rates for the inner-city poor may increase as more and more businesses move to suburban locations inaccessible to them.

Though not as tenuously attached to the labor force as the migrants and Indians, inner-city residents are still far from economic parity with the rest of the United States society. Many authorities have observed the impact of parental economic insecurity on children. Children who realize their parents are unemployed, employed sporadically, or are over-qualified for their jobs, tend to believe they will have similar experiences when they enter the labor market. Consequently, they do not value education and regard school as demoralizing and irrelevant.

The inner-city poor, like migrants and Indians, have health problems in addition to political and economic ones. The children of ghetto residents often "appear healthy (or simply overweight) when actually (they are) badly undernourished because of the lack of money to buy necessary foods or the knowledge of proper nutritional requirements." (Morlan and Ramonds in Friedt, 1968, p. 7.) The impact of malnutrition on children's ability to learn is great. Hunger alone can shorten a child's attention span enough to impede learning. According to the Board of Inquiry into Hunger and Malnutrition in the United States, "hunger and malnutrition take their toll in this country in the form of infant deaths, organic brain damage, retarded growth and learning rates, increased vulnerability to disease, withdrawal, apathy, alienation, frustration, and violence (U.S. Senate Hearings, 1968 pp. 2022-2023).

Apparently drug use is on the increase in the inner-city schools. While there are no publicly available and verifiable studies relating learning retardation and drug use, it seems logical that the frequent, heavy user would find it difficult to achieve intellectually if for no other reason than that drug effects are so consuming of time, energy, and attention that there can be little capacity left over for learning. Of course, the problem is not restricted to the inner-city. The affluent suburban schools are also reporting problems with drug-taking in their schools. But the consequences and impact of drug use seem more severe for inner-city students because of the interaction of their drug problems with other problems to be discussed in subsequent sections.

Overview of Inner-City Schools

There is no accepted definition of an inner-city school and there are no aggregated data on schools within the inner-city as such. The Office of Education, however, collects data on metropolitan central city school systems which serve areas coterminous with the central city, or cover the central city and some adjacent suburban areas. In 1968, the Office of Education estimated that a total of 12,347,353 students were enrolled in 304 metropolitan central city systems. Of this number, approximately six million could be termed "inner-city students," if one employs Asbell's estimate that half the children in the big cities are culturally deprived (Asbell in Smiley and Miller, 1968, p. 28).

In 1968, there were 15,863 schools in the 304 school systems; over three-fourths were elementary schools. As would be expected, enrollment was large. The average metropolitan central city school reported a student body of 600, as compared to 486 for the average suburban elementary school. The 1968 teacher-pupil ratio in central city elementary schools was 1:27; the ratio for secondary schools in central cities was 1:22. In the same year, suburban elementary schools employed one teacher for every 26 pupils, and the suburban secondary school teacher-pupil ratio was 1:21.

In terms of years of schooling completed, central city teachers appear better qualified than their suburban counterparts. The 1968 Office of Education showed that 29 percent of the instructors in central city schools held at least a master's degree, while 25 percent of the suburban teachers had attained a similar degree. However, this apparent superiority of central city educators may be deceiving. Many teachers in cities are themselves products of inferior school systems. For example, the Passow report on Washington, D.C. public schools indicated that most instructors in Washington received their training in District schools or in other poor, racially segregated institutions (Passow, A. Harry, Toward Creating a Model Urban School System, 1967).

By 1968, almost three-quarters of the central city systems had kindergarten programs; a little over a fifth had pre-kindergarten programs. In the same year, two-thirds of the suburban school systems operated kindergartens. Office of Education data for 1968 showed that large city schools were more likely than suburban ones to have extensive special staffs, including librarians, guidance personnel, psychologists, audio-visual specialists and teacher aides. The school systems in the fifteen largest cities reported enrollments of 4,372,517 in the fall of 1968. The pupil-teacher ratios ranged from 20:1 in New York City to 30:1 in Detroit. The average per pupil expenditure exceeded the national average of $513 in all cities but Houston. Expenditures for total instructional staff were roughly one-third higher in these city schools than for the nation as a whole (U.S. Department of Health, Education, and Welfare, Office of Education, National Center for Educational Statistics, Statistics of Local Public School Systems, Fall, 1968, Schools, Pupils, and Staff).

In 1965, three-quarters of the Negro elementary students of the fifteen largest cities attended schools in which 90 percent or more of the students were Negroes. This high degree of racial separation was repeated throughout the nation in large and small cities. In New York, where there are concentrations of Puerto Ricans, 85 percent of the Puerto Rican students attended schools in which over half of the total enrollment was Negro and Puerto Rican (U.S. Civil Rights Commission, 1967, pp. 2-5). In 1969, 69 percent of the Los Angeles students with Spanish surnames were enrolled in schools in which over half the students were of a racial minority group; some 31 percent attended schools in which 95-100 percent were racial minority students.(Information provided by Office of Secretary, Department of Health, Education, and Welfare, Office of Civil Rights.)

Educational Deficits of Inner-City Schools

By and large, the schools of the inner-city are failing to produce students whose academic achievements are on a par with the rest of the country's students. Many drop out before achieving the minimum level of competence or the certification needed to enter the labor force.

Although New York City's educational problems are great, they reflect the types of difficulties experienced elsewhere in lesser magnitude. A panel headed by McGeorge Bundy which studied the New York City school system in 1967, stated:

> In a 1965 state-wide pupil evaluation conducted by the State Education Department, 55 percent of the students found to be below the State Testing Service level of minimum competence were New York City public school students, although the city's enrollment comprised only 35 percent of the state's total. The tests covered elementary and ninth grade reading and arithmetic...
>
> City-wide reading and arithmetic scores for the 1966-67 school year indicated that one out of three pupils in the city's schools was a year or more behind the national average. Except for ninth graders in New York City whose scores were 0.3 percent better than the national norms, the gaps ranged from 1.0 percent behind the national level (eighth grade reading) to 17.0 percent behind (sixth grade mathematics). The percentage of the New York students below national norms has increased in all but one grade (the eighth) since May, 1966.
>
> ...Data provided to the Panel by the Board of Education indicated that 25.6 percent of the city's fifth grade pupils were one year and eight months behind national performance norms in reading. The proportion of reading retarded pupils increased to 42 percent for seventh graders and changed to 36 percent (as against 30 percent nationally) among eighth grade pupils...
>
> Of the 64,117 students admitted to the city's high schools and scheduled to graduate in the class of 1967, only 43,864 graduated. Of those graduating in 1967, 21,364 received academic diplomas. In other words, only one-third of the students admitted to high schools in New York City received the minimum preparation for college entrance. Nationally, over 43 percent of the students admitted to high school go to college.

> ...According to a report by fourteen civic groups, some 12,000 students were suspended during the last school year. They included mentally retarded or emotionally disturbed children--many of whom were then left to their own devices. The report also said that many students are suspended without a fair hearing on charges ranging from failure to do homework to fighting with other children.
>
> In 1967, "Thirty percent of the school system's teachers were 'permanent substitutes' who did not have standard licenses." There were 500 classes to which no teacher was permanently assigned; teacher absences accounted for an additional 1500 uncovered classes daily, (the equivalent of 30 schools or one average school district). (Mayor's Advisory Panel on Decentralization of the New York City Schools, 1967, pp. 1-2.)

Some problems of the Washington, D.C. public schools, as identified by a blue-ribbon panel headed by Harry Passow, are typical of other inner-city education systems. In 1968, Passow cited these indexes of educational deprivation in the Washington, D.C. school system:

- --A low level of scholastic achievement as measured by performance on standardized tests.
- --Procedures which group elementary pupils according to ability but which, in reality, have not permitted those identified as slow learners in early school years to leave this track during their entire educational career.
- --A curriculum which, with certain exceptions, has not been especially developed for or adapted to an urban population.
- --A low "holding power" or high drop-out rate.
- --An increasing de facto residential segregation for the District as a whole, which has resulted in a largely re-segregated school system.
- --Staffing patterns which have left the schools with large numbers of "temporary" teachers and have hindered the District's efforts to attract qualified personnel at a time of national teacher shortage.
- --Guidance services which have not reached the heart of the pupils' needs.

> --Inadequate evaluation and assessment procedures together with limited use of test data for diagnosis and counseling.
>
> --In-service teacher education programs which have not provided adequately for continuing professional growth.
>
> --A promotion system which has lacked the basic ingredients of career development and training for supervisory and administrative leadership.
>
> --Inadequate patterns of career development for specialists, such as supervisors and psychologists, which have limited their effectiveness.
>
> --A "reacting" school system rather than an "initiating" one which encourages innovation, long-range planning and program development.
>
> --A central administrative organization which has combined overconcentration of responsibilities in some areas and proliferation and overlap in others.
>
> --Complicated, cumbersome budgetary and business procedures.
>
> --Substantial numbers of inadequate, ill-maintenanced school buildings.
>
> --Poor communication between schools and the communities they serve.
>
> --A Board of Education operating under cumbersome procedures which have required an inordinate amount of time to be spent on repetitive debate and administrative detail rather than on policy leadership.
>
> --Relationships with other youth-serving agencies in the city which have been less than optimal. (Passow, 1968, p. 3.)

More recently, an investigation team headed by Kenneth Clark assembled data which indicated that Washington, D.C. students are less proficient in reading and arithmetic than their statistically average peers throughout the nation. Standard achievement test scores in reading indicated that third graders were half a year behind the national norm, while ninth graders were almost two years behind. Arithmetic computation scores were close to the national norm, but scores in mathematical problem-solving were low. Sequential tests of educational progress from grades four through eleven tended to corroborate the cumulative deficit thesis, which posits that the longer the disadvantaged student remains in school the farther behind he falls (Clark, et al., 1970, pp. 177-180c).

A study of public education in Newark illuminates additional inadequacies faced by most inner-city schools. The report of the Governor's Select Commission on Civil Disorder for the State of New Jersey included these observations on the city:

> One-half of secondary pupils are or will be functionally illiterate when they complete their high school education.
>
> In grade seven, Newark's average on the Stanford arithmetic test was 5.1 compared to the national norm of 7.2.
>
> The dropout rate from 1962-1966 (cumulative) was 32 percent.
>
> The public school system is $250 million behind in capital construction, yet the city and school board have reached legal bonding limits.
>
> Thirty of the 75 buildings were constructed before 1900; 44 are more than 50 years old.
>
> Thirty-five of the 50 elementary schools are operating at from 101 to 151 percent of capacity.
>
> Twenty-eight percent of the children leave Newark's system each year for suburban or parochial schools; they are replaced by southern Negro immigrants and Puerto Ricans from New York City.[8]

A national picture of the state of inner-city school systems is hard to develop. Although standardized testing is used widely to compare individual schools, and entire school systems, no aggregation of test results is currently available. The most recent information approximating a national view was published in the 1966 Coleman Report, Equality of Educational Opportunity. Data for this report were obtained from a cross-section sample of 4,000 schools.

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[8] Excerpt from Report for Action, Governor's Select Commission on Civil Disorder, State of New Jersey, February 1968, reprinted in To Improve Learning, the March 1970 report of the Commission on Instructional Technology to the President and the Congress, p. 95.

School principals, approximately 600,000 students and 60,000 teachers, were tested and questioned for information on facilities, equipment and aspirations and attitudes of students. Standard achievement tests were administered to the sample school populations. Imperfect as these tests were for measuring either achievement or the effects of schooling, particularly of children who were not test-wise, the results were useful for demonstrating differentials between schools.

For the purposes of this comparison, only data from metropolitan schools are used. Because the effect of de facto segregation has been to confine Negroes to inner-city schools, the scores for Negro students in metropolitan areas are used as a rough equivalent of "inner-city poor." Obviously, other ethnic groups are included within the inner-city, and most major cities have substantial Negro populations that cannot be considered poor. Nevertheless, since the Coleman data break only along racial and not economic lines, it is necessary to use, for illustrative purposes, the achievement test scores of Negro metropolitan students as indicators of the relative achievement of inner-city students.

As Table 6 indicates, Negro children in metropolitan areas consistently rank behind their white counterparts in northeastern metropolitan schools; and the longer they stay in school, the farther behind they fall. The extent of this cumulative deficit is illustrated in Table , developed from tabular material appearing in the Coleman Report. (The tables used for this compilation were 3.121.1, 3.121.2, and 3.121.3, which appear on pp. 274 and 275 of the Coleman Report.)

Inner-City Culture as a Factor

Thousands of analyses have been written, particularly in the last ten years, explaining why inner-city children perform poorly academically. Observers of the state of education in the inner-city agree that the schools are failing to prepare students for a constructive role in adult society. They disagree as to the causes of failure. Some argue that the children are doing as well as can be expected considering their innate ability; others cite the intellectually and emotionally crippling environment of the slum; still others link school failure to psychological aberrations associated with the inner-city family structure. Other critics attack the schools as being de-humanizing and stultifying, and are particularly critical of the pedagogical techniques used and the attitudes of teachers toward students.

Educational analysts seem to have divided into two camps--one group emphasizes deficiencies in the child, and the other, deficiencies in the schools--in their efforts to

Table 6

CUMULATIVE DEFICITS OF NEGRO METROPOLITAN AREA STUDENTS

VERBAL ABILITY: NUMBER OF GRADE LEVELS BEHIND THE AVERAGE WHITE IN METROPOLITAN NORTHEAST: NEGRO STUDENTS IN METROPOLITAN AREAS

Negro, Metropolitan	Grade Levels Behind		
Area	Grade 6	Grade 9	Grade 12
Northeast	1.6	2.4	3.3
Midwest	1.7	2.2	3.3
South	2.0	3.0	4.2
Southwest	1.9	2.9	4.3
West	1.9	2.6	3.9

READING COMPREHENSION: NUMBER OF GRADE LEVELS BEHIND THE AVERAGE WHITE IN METROPOLITAN NORTHEAST: NEGRO STUDENTS IN METROPOLITAN AREAS

Negro, Metropolitan	Grade Levels Behind		
Area	Grade 6	Grade 9	Grade 12
Northeast	1.8	2.6	2.9
Midwest	1.8	2.3	2.8
South	2.1	3.0	3.9
Southwest	2.1	3.0	4.1
West	2.1	3.1	3.8

MATH ACHIEVEMENT: NUMBER OF GRADE LEVELS BEHIND THE AVERAGE WHITE IN METROPOLITAN NORTHEAST: NEGRO STUDENTS IN METROPOLITAN AREAS

Negro, Metropolitan	Grade Levels Behind		
Area	Grade 6	Grade 9	Grade 12
Northeast	2.0	2.8	5.2
Midwest	2.1	2.5	4.7
South	2.4	3.1	5.6
Southwest	2.3	3.0	5.7
West	2.4	3.1	5.3

explain the failures of inner-city education and to devise appropriate remedial approaches. Nevertheless, both camps reject simplistic explanations of the either/or type, and frequently incorporate each other's viewpoints into their own analyses.

In the early sixties, the "cultural" (or "environmental") deficit group came to the fore. Representatives of this group are the educators, Martin and Cynthia Deutsch, who claimed that inner-city school children performed poorly because the child-rearing methods in their milieu and the nature of their home and neighborhood life did not prepare them for school success. The logical extension of this thinking was to devise means to compensate for deficits in the children's backgrounds so they would be able to meet the school's expectations. The assumption was that the children would have to make the major adjustment, while the school acted as an intervening agency of change (Deutsch in Frost and Hawkes, 1966, p. 146).

It has been observed frequently that urban slum children suffer from a "restricted"environment. The typical urban slum apartment is overcrowded, sparsely furnished, and often lacks adequate sanitary and other facilities. It and the immediately surrounding neighborhood constitute the children's world. The intellectual stimulation that might be provided by a more comfortable and varied atmosphere is not available (Deutsch, M., 1967, pp. 34 and 45).

Moreover, the children do not engage in the kind of interaction with adults which white middle-class children allegedly do. Parents of slum children are more apt to be authoritarian. They place less emphasis on fostering curiosity, ensuring a rich variety of experiences, and providing explanations. The relationships of middle-class children to adult authority figures prepare them to conform to standards of behavior and teaching techniques imposed by the teacher (Deutsch, C. in Cowles, pp. 92-97).

Ordinarily, oral communication is reduced to single words, or gestures are used. Few toys,or even household utensils to substitute for them, are available; books, newspapers, magazines, pencils, and paper are scarce. The children adapt early to the extra-lingual communication code of their surroundings, but their spoken language development suffers from a lack of stimulation.

The relationship between language deficit and reading disability has been explored extensively. Many inner-city school students have difficulty reading. This skill deficit is particularly critical because schools, as presently constituted, are unable to teach much to students who cannot read. The New York City Board of Education has stated that about 60 percent of the city's third graders read so poorly their success in higher grades is unlikely. Some critics feel the root of the inner-city education problem is the failure of students to learn to read properly in the first two grades.

Reading disability is only part of the problem created by impeded language development. Basil Bernstein argues persuasively that deficiencies in language skills affect a child's ability to think. Understanding relationships and using words in problem-solving are extremely difficult for children whose experience in using language for such purposes is limited (Raph in Cowles, 1967, pp. 183-208).

As a result of these combined factors, children entering school are: (1) unable to attend to the teacher's discourses, which they perceive as being long and detailed; (2) are not ready to learn to read because their verbal skills are insufficiently developed; and (3) cannot function in a group to the teacher's satisfaction because their behavior controls are not internalized.

Inner-city children are frequently characterized as motoric, rather than symbolic learners (Riessman, F., 1962, pp. 49-73). It is said that they have a practical approach to things, a spatial rather than a temporal orientation, and learn better when physical skills are involved. Those who accept such a characterization as valid believe physical learners like to do as much as possible when solving a problem, respond more to the concrete, tangible properties of objects and situations, and have difficulty grasping categorical and relational properties. According to this school of thought, motoric learners usually reason inductively rather than deductively and are not introspective. It is thought that they like to draw, enjoy role-playing, and are particularly responsive to the game format. The latter may be attractive because rapid feedback is automatic, the more highly developed extra-verbal communication skills are called into play, and structure is provided by the rules.

However, schools typically are geared to the strengths of the verbally proficient symbolic learner. Consequently, in school, the motoric learner is also a slow learner. Frank Riessman has pointed out that such a learner "requires more examples before seeing a point, arriving at a conclusion or forming a concept. He is unwilling to jump to conclusions or to generalize quickly; exceptions to the rule bother him. He is a slower reader, a slower problem-solver, slower at getting down to work, slower in taking tests." (Riessman, F. 1962, p. 65.)

Whether they are called motoric or slow learners is not as important as the apparent difficulty inner-city children experience in making the transition to abstract symbolic thinking. Beilin and Gotkin, among others, have pointed out that inner-city children have trouble abstracting the characteristics of the general from the particular, and blame the children's underdeveloped language skills. Often inner-city children entering school cannot name objects or actions familiar to most middle-class children and do not know words indicating relationship or position. They have difficulty grasping the idea that the same object can have many different names. They often cannot associate pictures with the objects/actions portrayed or verbally describe them (Beilin and Gotkin in Passow, et al, 1967, pp. 287-386). If the ability to abstract is not developed, the children's academic problems will likely increase cumulatively, since this capacity is increasingly emphasized at higher educational levels.

Motivation is another problem complicating the learning process for inner-city children. They often appear inattentive, non-conforming, impulsive, and uninterested in achievement. To some observers, this is a reflection of the disorganized, anomic life of the slum. To others, it indicates that the school is an overwhelming, bewildering experience which destroys the desire to achieve. Because the children are not prepared to perform according to school expectations, they find themselves constantly in trouble for not paying attention, not sitting still, not following directions, and not knowing how to do what they are supposed to do.

Their problem-solving skills have not developed adequately, and they have not internalized realistic standards of self-evaluation. Consequently, they cannot accord themselves self-approval for what they have accomplished, and they doubt that the teacher's approval will be forthcoming, either. Under such circumstances they become convinced they are stupid and will fail at whatever they try. Kenneth Clark, among others, has asserted that as a child discovers he can learn, his natural motivation to achieve increases, but if he experiences failure,his motivation decreases. This lowering of desire to succeed allows him to "escape from a situation of failure which would be intolerable to his ego." (Clark, K. et al, 1970, p. 61.)

Middle-class children, ordinarily, are prepared to meet the demands of school. Teachers tend to assume they will succeed, and the academic material fits their level of skill and social development. Generally they can perform adequately and develop feelings of self-mastery which are reinforced through success.

Self-confidence evidently influences school performance greatly. As pointed out earlier in the discussion of American Indians, the sense of controlling one's fate is more highly related to achievement than any other factor in a student's background or school (Coleman in Smiley and Miller, 1968, pp. 458-459). Irwin Katz, who has worked extensively on the relationship between standards of self-evaluation and academic motivation, found that the high, stringent standards which low-achieving Negro boys set for themselves were so severely adhered to that the criteria became totally dysfunctional. On the basis of experimental work, he hypothesized that the propensity for self-criticism became an effective method of self-imposed failure. Katz surmised that this mode was adopted to relieve anxiety over the negative consequences of failure (Katz in Harvard Educational Review Board, 1969, pp. 60-69).

Some writers attribute the lack of academic motivation to the irrelevancy of most school offerings to the experiences of the students. Even the "color-me-brown" versions of the standard Dick and Jane readers present a picture of a peaceful, happy life, where frustrations are rare and easily overcome. As Klineberg has observed, "life (in these books) is filled almost exclusively with friendly, smiling people, including gentle and understanding parents, doting grandparents, generous and cooperative neighbors, even warmhearted strangers...an occasional display of anger...is usually very transitory." It is a rare slum child to whom such a world would seem even remotely realistic (Klineberg in Smiley and Miller, pp. 172-173).

For older students, incongruity between lessons and life is even more apparent. The street culture is very important to inner-city students' lives; of necessity, they become street-wise at an early age. However, being "school-wise" is a different matter. Fantini and Weinstein state:

> There is a dichotomy and tension between the child's urban curriculum and the school's more antiseptic curriculum--a dichotomy that usually leads the urban child to label the school's curriculum as "phony." (Fantini and Weinstein, 1968, p. 10.)

Many inner-city junior and senior high school students read so poorly they are given simple books in content and tone which imply they are children: They are not. Borton, recounting his days of teaching "low ability" high school students whose alleged I.Q. averaged 85, described this anomaly:

> Several had illegitimate children; four or five were on parole; two had been raped by homosexuals in the reformatory...others shut out evil (through adherence to) fundamentalist religion or race pride. (Borton in Smiley and Miller, p. 159.)

Even those who have escaped relatively unscathed from slum-life pressures share with their less resilient classmates an over-abundance of life experience and paucity of understanding.

Inner-City Educational System as a Factor

Authorities on the other side of the controversy over the deficiencies of inner-city education concentrate on the shortcomings of the school system itself. Kenneth Clark has pointed out that conditions in Harlem in the 1930's were no better than they are today, if anything, they were worse. Yet the schools of the 1930's produced fewer failures than today's schools. He attributes this to the teachers' attitudes. In the 1930's teachers had faith in the ability of their students to learn, and the students, responding to their expectations, did (Clark, Harvard Educational Review Board, pp. 173-186).

Other critics contend that the problem basically is a lack of congruence between what the schools expect from the student and the expectations the pupils can actually meet. For example, the schools stress obedience, punctuality, cleanliness, care of property, and respect for authority. The schools, after all, are large organizations (a 600-student elementary school is typical) and must be run to achieve some administrative efficiency. If any group is to function as a group, certain rules are necessary. Bureaucracy and authoritarianism are likely to result simply from the logistics of operating a large organization.

However, inner-city poor students have not internalized the behavior norms necessary to assure the smooth running of such an organization, and some, for many reasons, are hostile, rebellious, and antagonistic. As a result, much school time and effort is spent maintaining order and attending to administrative details. Martin Deutsch has estimated that up to 75 percent of a teacher's time in a slum school is spent at non-teaching tasks (Silberman, 1964, p. 265).

School Buildings. The physical facilities of inner-city schools are frequently inferior. Though many new buildings have been built and equipment shortages alleviated to some extent in recent years, many schools are still operating with shortages of textbooks and even pencils and paper. However, new buildings have not notably improved the quality of education. Herbert Kohl's description of a move his sixth graders made from an old to a new school summarizes this point:

> "The building was new; the school wasn't... Within a few weeks the chaos and disorder of the old school was reconstituted in the new one. The administration disappeared into

> new nooks and crannies, children roamed the halls teacherless, disciplineless, essentially schoolless." (Kohl, 1967, p. 162.)

Moreover, the Coleman Report stated that such factors as buildings, facilities, books in the library and even per pupil expenditure have no substantial relationship to achievement if the educational backgrounds of the students and the teachers are held constant.

Student-Teacher Relationships. According to many critics, the nature of the student-teacher relationship is the root of inner-city educational problems. Children with the characteristics described previously present real difficulties in the traditional classroom. Teachers unfamiliar with the students' lack of preparation for school and untrained for working with the urban poor, expect the children to be ready to read, function well in groups, and perform other traditional classroom tasks. They become frustrated and disappointed upon discovering the students cannot do these things. All too often, the sense of doing something well is denied not only to the students, but to the teachers.

Teachers, understandably, prefer students they regard as bright, highly motivated, and responsive. When confronted with a classroom of pupils they consider uninterested, dull, apathetic, or hostile the teachers cannot interject the sense of discovery, excitement, and involvement they feel is necessary to teach creatively and effectively. Jules Henry pointed out that children whose homes lack structure and orderliness are so disorganized in their approach to tasks that a chaotic classroom atmosphere is likely to prevail. Confronted with 30 to 40 students who have little grasp of school concepts of time and procedure and are both afraid of failure and convinced of their own inadequacies, teachers in self-defense select the students they feel they can reach. They ignore the others (Henry, J., in Frost and Hawkes, p. 396).

Not all city classrooms are chaotic, some are models of order. However, even in such environments, many children fail to learn. Consciously, or unconsciously, instructors teach as they themselves were taught. Many were trained as passive students in an authoritarian system and rely on these same "say and listen" methods. Their classrooms may be decorous, but the transactions in which children learn to read, write, compute and to think, act, react, and develop their capabilities fully do not occur. Paul Lauter and Florence Howe hold the opinion that teachers would be uncomfortable in "an open classroom with active, inquisitive youngsters...(where) unanswerable questions might be asked; a teacher might be 'wrong,' be embarrassed." (Lauter and Howe, New York Review of Books, February, 1968, p. 18.)

It is necessary to point out that no one has demonstrated definitively that learning cannot occur in an authoritarian classroom which relies on rote learning. However, it is difficult to see how a spirit of inquiry can be fostered in such an environment. Charles Silberman, among others, has argued persuasively that the education needed in a rapidly changing technologically advanced society is one that imparts the intellectual discipline, depth of understanding, and a capacity to cope with a constantly changing environment. It is highly likely that people will need to be able to change not only jobs but occupations frequently throughout their work-lives in order to adapt to societal changes. In short, what is learned is less important than learning how to learn (Silberman, 1964, p. 253).

Two relatively recent surveys as well as the Coleman Report findings corroborate the view that teachers, as a group, have relatively little faith in the capabilities of their students. The Passow Task Force administered a questionnaire to a sample of D.C. teachers to determine what they felt interfered most seriously with teaching and learning. At least half the teachers cited the poor home environment of the students, the lack of parental interest, oversized classes, time-consuming discipline problems, and poor training in the lower grades.

In 1968, Johns Hopkins University investigators interviewed teachers as part of a larger study on the reactions of employees of social institutions to the current racial crisis. The teachers surveyed strongly rejected a statement that their students were uneducable, but they agreed their pupils were not above average in ability or in the extent to which they cooperated with teachers. When asked to rank the major problems facing their schools, community apathy was placed first with lack of motivation and preparation on the part of the students, second. Fifty-nine percent of the teachers sampled agreed that "many communities provide such a terrible environment for the pupils that education doesn't do much good in the end." (Boesel, et al, 1969, p. 27.)

This fatalistic view is repeated in Smith and Geoffrey's micro-ethnographic study of an urban classroom. Their observations led them to conclude that schools faced these major problems: lack of ability on the part of the students, student mental health problems, and the omnipresence of crisis. In the school observed, the students' intelligence scores indicated that most were of below average intelligence. A high proportion of the students faced such severe family and social problems that emotionally they were not available for learning. Rarely a school day passed without a fight, robbery, arrest, or some other act of violence. The constant expectation of violence led to a pre-occupation with the sensational aspects of an incident and to an emphasis on control inimical to the development of a free climate for learning.

AMERICAN EDUCATIONAL SYSTEM

The overall, complex configuration of today's American educational system has evolved from the educational needs and requirements of the mainstreams of American society. Generally, the system's accomplishments with the children of the majority culture are considered impressive, although there are many thoughtful critics who feel the children should have been and should be, better served.

Whatever its accomplishments, it is clear that the system incorporates a number of underlying assumptions and normative modi operandi which reflect the life style of the dominant culture. And many of these assumptions and procedural expectations interface with, and conflict with, the specific conditions and characteristics of the three target groups previously discussed. In one sense, they were all implied in those discussions, because they represent the context in which the factors identified take on significance as part of the educational problems of the target groups. It is helpful, therefore, to extract and explicitly list these assumptions and expectations, since they are factors which are significant in their own right in the development of strategies for meeting the educational needs of the target groups.

Population Stability. School programs are designed for a relatively stable student body. Pupils are expected to attend the same school regularly for approximately nine consecutive months.

Age-Bound Grade System. The age-bound grade system produces special problems for sporadic attendees and those who do not achieve on schedule. Early failure in the educational sequence impedes students' chances of success at subsequent grade levels.

Options for Drop-Outs. Present options for completing secondary education outside the schools ordinarily are predicated on a high degree of student motivation. For those lacking such motivation, other options for self-improvement, such as work-training, are also limited and when available, operate outside the traditional school system. Enrollment in vocational education offered by the schools is often considered as a mark of failure and, therefore, is avoided.

Learning Readiness. Educators expect children entering school to have sufficient language ability and social maturity to work in a group, to accept the teachers' authority, and to begin learning basic academic skills.

Learning Motivation. Traditional devices for instilling motivation to learn are rooted in assumptions about the role of grades, teacher approval, competitiveness, and recognition of the importance of long-term goals. When these assumptions do not hold failure in the traditional academic process frequently results in alienation from the learning process itself.

Teacher Credentials. Schools have fairly rigid criteria for hiring and promoting teachers. Employment and advancement are usually based on formal training and degrees held. Traditionally, there has been relatively little emphasis on the teachers' empathic capacities, including appreciation of cultural differences and their willingness to adopt teaching approaches consistent with these differences.

School as a Socialization Agent. An acknowledged purpose of education is to transmit the dominant values of the society to future generations. Implicit in this goal is the secondary importance attached to transmission of the cultural diversity, although respect for differences is a part of the American value system. With all the emphasis given to the value of a pluralistic society, the educational system has not yet found a consistently successful way of reconciling the demands of diversity and homogeneity.

School Atmosphere. Educational institutions engage in many rule-making, rule-enforcing and record maintenance functions. Because of the demands of maintaining order and discipline and of submitting required records, teachers often become preoccupied with these functions and have little time left for teaching. Such an ordering of priorities contributes to an authoritarian, rigid atmosphere which tends to stifle an open, self-initiated exploratory approach to learning.

School System Control. The decentralized school district form of organizational control of the public school system helps to insure the relative responsiveness of the schools to the local constituencies they serve. The success of this arrangement, however, depends upon meaningful involvement of the community members and their commitment to the school's educational efforts--and these in turn require community membership and the capability to act efficaciously.

Institutional Resistance to Change. Schools are institutions and, as with other human institutions, special interest groups, intent on maintaining their perceived prerogatives, develop within them. This internal conservation hinders the introduction of changes which may be desired.

CHAPTER III

CASE STUDIES OF INTERNATIONAL USES OF MEDIA AND CROSS-CULTURAL LESSONS LEARNED.

INTRODUCTION

The case studies of media use in Australia, Israel, Japan, and New Zealand prepared in this study are contained in the separately bound Volume II of this report. These case studies, along with first-hand knowledge about media use in American Samoa and Niger of the study staff and consultants, provided the basis for adducing the lessons learned discussed in this chapter. To provide a context for that discussion, the four media systems examined in the case studies are briefly described first.

USES OF MEDIA

AUSTRALIA

The Use of Instructional Media in Australia

Australia was selected as a site for this investigation because of the long history there of the use of media in education. Instructional television *per se* is limited but the use of radio, particularly to reach students in remote and isolated areas, is relatively extensive. As in Japan, a national broadcasting corporation, the Australian Broadcasting Commission, is integrally involved with the state educational systems in the production and coordination of both radio and television programming for students. In addition, a special two-way radio school is operated through the Flying Doctor Service to reach students in the outback whose geographic location makes school attendance impossible.

The Australian Broadcasting Commission (ABC) which began radio broadcasts in 1932, now operates three networks, one of which is devoted to broadcasts for special groups including the schools. At the end of 1969, transmission had been extended to cover 95% of the population. A national television service was begun in 1956 which now also reaches 95% of the population.

Production facilities for educational programs vary from state to state. The most elaborate, located in Sydney, has eight television cameras and all the necessary services for a full-scale broadcasting operation. Typically, a state has one studio and three cameras.

About 11,000 schools have radio receivers and 5,000 have television receivers enabling them to use ABC broadcasts. All programming is designed for classroom use. About 3,500 programs, between 10 and 20 minutes in length, are broadcast annually. About a third of the radio programs broadcast are national programs, half are prepared in the state in which they are transmitted, and the remainder are shared programs produced in other states.

Since 1963 ABC television transmitters have been available for educational broadcast for the entire school day. Approximately 10 to 14 television programs of 20 to 30 minutes are presented to the schools each weekday. Many are repeated up to three times a week to accommodate schools' different timetables. About half the television programs are produced at the state level, a fourth are shared, and another fourth are purchased from other educational networks, e.g., the British Broadcasting Corporation.

Responsibility for broadcasting policy and program direction is shared by educational authorities and ABC officials. The Directors General of Education for each state head a School Broadcasts Advisory Committee which sets guidelines for school broadcasts. All the State Directors form a Federal School Broadcasts Advisory Committee chaired by the Director of Education of the Australian Broadcasting Commission. The ABC Director of Education is in charge of all national school broadcasts and is responsible to the Commission's senior management.

For each of the six states there is an ABC state counterpart of the federal Director of Education. They, in turn, supervise the ABC education officers responsible for program production within the states. These education officers are recruited from the teaching profession on the theory it is easier to train a teacher in broadcasting than to train a broadcaster in teaching.

The School Broadcasts Advisory Committee meet two or three times a year to review the broadcasts, their fit with the schools' syllabi and to plan the following year's schedules. They also review the reports of their planning and appraisal subcommittees and of the ABC education officers. The subcommittees are comprised of subject matter experts, classroom teachers and representatives of various educational bodies. The ABC education officers attend these subcommittee meetings in order to assure a meld of the producers' knowledge of media use with the educators' knowledge of classroom teaching needs. However, the primary link between the classroom and ABC are liaison officers who inform the ABC education officers of the educational needs of teachers and students, suggest new programs and improved production techniques, and report on reception in the schools. As part of their liaison role, they also publicize and promote the educational broadcasts.

Between 1956 and 1963, most educational television broadcasts were experimental and were aimed primarily at 8 to 11 year olds because of the greater flexibility of primary school schedules. In 1963, the Advisory Committee decided to produce direct instructional programming for mathematics and science for secondary school students because classroom teachers' expressed the need for assistance in presenting "new math" and "new science." By 1969, the state educators decided the need for such direct teaching broadcasts had been met. At this point, it was decided to further develop enrichment and supplemental programming for upper primary and secondary school students.

However, there are still many programs in, for example, foreign language and mathematics that provide direct instruction. These programs are primarily intended for the rural secondary schools where teachers are sometimes called upon to teach a number of subjects in which they have not been trained. Usually, these broadcasts are produced as a series and thereby require the teachers to plan well in advance to coordinate their classroom presentations with the broadcasts. Because the integration of the radio and television broadcasts into the teaching plan is considered essential, not only in the rural schools but in all schools, the broadcast authorities produce a variety of ancillary materials including: broadcast schedule wall sheets, teachers' guides, teacher notes providing commentary for individual programs, teachers' handbooks, and, in some subject areas (e.g., social studies), booklets for students.

In spite of the relatively extensive use of media in Australia, the broadcasts have had relatively little effect on school system design or curricula. The prevailing attitude is that the needs of the teacher and school system should determine the content and approach of educational broadcasts. Evidently, both educational and broadcasting authorities feel traditional education methods are generally preferable to television or radio teaching. However, this attitude may change as more time and attention is given to training teachers to use media effectively.

The Correspondence School

Australia has developed a correspondence education program for pupils who are not served by the normal education process or whose schools are so limited (the one room school is not uncommon) as to require supplements to the regular curricula.

The largest correspondence school is located in New South Wales and enrolls some 6,000 students. Some 2,200 are primary and secondary students in home-study programs, with most of the remainder taking supplementary courses by correspondence enrolled in schools. In addition, some 17,500 adults are taking course work by correspondence through technical colleges.

Because the writing of the correspondence courses is so time-consuming, they can be revised only infrequently. They are, therefore, somewhat out of date compared to the courses offered in regular schools. This factor is somewhat compensated for by the correspondence teachers' corrections and additional commentaries on the students' returned work.

The headmaster of the New South Wales Correspondence School is of the opinion that students who take all of their secondary level schoolwork in the correspondence school are either ill, those considered not sufficiently prepared to succeed in boarding school, or students who are located overseas. He felt that the students who were conscientious (usually, the overseas students) were well prepared for university work because the secondary level correspondence courses required more teacher preparation, allowed for independent study on the part of the student, and, by virtue of their written (rather than oral) format, the lessons were amenable to more intensive review by the students.

In 1933, radio broadcasts to support correspondence lessons were instituted. Between 1961 and the present, the disparity of quality between the regular school broadcasts and that of the correspondence school broadcasts has combined with the difficulties in coordinating broadcasts and correspondence lessons to produce a gradual decrease in the number of correspondence school radio programs. At present, in New South Wales, there are three broadcasts each week, while in Queensland and Victoria, only one correspondence school radio program is presented weekly. Television is not used to support the correspondence course work.

The primary functions of the correspondence school broadcasts are to provide the students with a sense of school community and to help the students' supervisor (usually parent or governess) better fill the guiding role ordinarily supplied by the teacher. The broadcasts are not intended to substitute for periods of instruction under the direction of the supervisor.

The School of the Air

Throughout Australia's outback, the Royal Flying Doctor Service has established bases to maintain contact with families at isolated homesteads or settlements. Since 1951, this two-way radio communication system has also been used for educational purposes. Today, there are 12 Schools of the Air throughout Australia.

The transmitters are maintained by the Flying Doctor Service and the State education departments pay an annual rental fee for their use. Most of the children use one-way, battery powered transceivers especially developed for the School of the Air. These transceivers are either purchased or rented by the students' families. In some areas, charitable organizations loan transceivers to students whose families cannot afford them.

The educational facilities of the Schools of the Air vary. For most cases, the schools share equipment with the Flying Doctor Service, in some areas, the transmitter is located in a community school classroom; in a few others, separate classroom studio buildings have been constructed by the State education departments.

Since all teachers in the Australian school system are required to teach at least two years in a rural school, the Schools of the Air have little problem recruiting teachers. Most of the teachers are young, recent teachers' college graduates. Many have had some correspondence teaching experience, but none are given specialized teacher training or instruction in broadcasting.

School of the Air programs are designed to supplement and enrich the formal lessons presented by correspondence schools, but the broadcasts are not closely coordinated with the correspondence school lessons. The teachers interviewed by the case study investigator felt that the most important School of the Air goals were to develop self-confidence, self-assurance, and a spirit of school community among children who are otherwise shy, isolated and experientially limited. Emphasis is given to fostering a sense of school spirit and also to helping students adjust to the boarding school or hostel they will attend after the sixth grade.

Because enrollment in the School of the Air is voluntary, parental support is needed to supply the transceiver, to encourage regular student participation in the broadcasts, and to ensure correspondence lesson completion. As a result, it is the most motivated, informed and affluent families who tend to have children involved in the School of the Air.

ISRAEL

The case study report on Israel's instructional television system is the culmination of five months of interviews, observations, and study of published and unpublished materials in that country. These activities were undertaken during the period from October 1969 to February 1970, the first half of the school year.

Israeli ITV is located in a specially designed television center in Ramat Aviv, a northern suburb of Tel Aviv, the country's largest metropolitan area. Adjacent to Tel Aviv University, the center produces and transmits programs as far as the signal permits, from Kiryat Shmona in the north to Be'er Sheba in the south. This is a distance of approximately 115 miles. In 1969-70, ITV was used in approximately 1,000 of the state's 1,400 schools.

With the exception of two series of "enrichment programs," virtually all programs are integrally related to the school curriculum. Teachers using television are given special training, directed by the Center for Instructional Television (CIT), to make maximal effective use of the media. Teachers' manuals and pupils' guides are especially prepared for each series, and an evaluation unit provides regular feedback from pupils, teachers, and observers to production teams. The CIT is also geared to conduct more basic research on the relative effectiveness of different production approaches.

Israel's educational system is highly centralized, both in terms of administration and curriculum. Curricula are set by the Ministry of Education and deviation and innovation, though possible, are limited by the need to prepare pupils for national standard examinations at the end of primary and secondary school.

Description of ITV Project

It is unlikely that instructional television would have been introduced in Israel if not for the initial interest and support of the Rothschild Foundation, Hanadiv. Initially, the medium was considered as a possible solution to the persistent problems of large classes (often 45 to 50 in primary grades) and insufficient numbers of qualified teachers. It was originally intended as a means for materially improving the academic achievement of children whose families had come from the Middle East and North Africa and who are generally in the lower socio-economic strata of society.

It was clear from the start that instructional television would be a feasible undertaking only if it were given an integral, rather than supplementary, role in the curriculum. A 1962 survey sponsored by Hanadiv recognized these factors and although it conceded that ITV was not a substitute for qualified teachers, the report suggested that it might offer a more immediate and direct means of improving education--even with large classes--than investment in teacher education. The authors recommended an experimental period during which the ITV Center was to be built, staff trained, and production begun for transmission to a small number of schools.

Israeli instructional television was first housed in what was to have been a supermarket in Herzlia, another northern suburb of Tel Aviv. Project "Eureka," as it came to be called, was essentially a school to teach and train future staff. Foreign experts were relied upon for a period of several years.

Programs were first produced as learning exercises for the producers. By January 1966, when the staff moved into permanent headquarters, it was ready to begin producing for transmission. In March 1966, ITV began transmitting programs in three subjects to the 33 schools chosen for the pilot project. These schools were selected by inspectors from the Ministry of Education on the basis of the population they served, their geographical location (given the limitations of the transmitter in use at the time), and the degree of support and cooperation promised by the principals and staff.

In 1968, at the end of the experimental period, the organizational future of instructional television had to be decided. Three proposed organizational alternatives were suggested. One involved an independent self-supporting and publically owned center for instructional media that could branch out in the field of educational materials generally, eventually being able to operate as a profit-making enterprise selling and exporting its product. The second alternative suggested incorporation of instructional television into the state broadcasting authority. The third option subsumed instructional television under the Ministry of Education, which was already involved in an advisory capacity and as a principal consumer.

Eventually, the decision was made to transfer all authority and responsibility for ITV to the Ministry of Education for a two-year trial period, after which the question would be reopened for discussion.

The Center for Instructional Television became integrated into the Ministry with its directorate responsible to the Minister himself. Transmission was rapidly extended to all parts of the country. Within four years of the pilot project's commencement, the ITV system's coverage grew from 33 schools to almost 1000 schools. In the first years of regular (non-experimental) operations (1968 through 1969), 465 of the country's 1,400 schools participated in the system, their number rising to 964 the following year, 1969-70. New subjects were introduced and new series planned to replace those found faulty or out-dated. With the exception of small areas in the far south and the far north, reception is sufficiently good to permit transmission throughout the state and the system is open to any schools which meet its requirements and conditions.

Each subject included in ITV involves a continuous series of lessons. In 1969, subject telecast included mathematics, geometry, English, nature, biology, physics, and drafting. A kindergarten program involving 600 pre-schoolers was begun on a trial basis in 1970. Telecasts last approximately 20 minutes except for introductory English (grade 5) where 10-minute programs are repeated later in the week. Generally, for every hour of telecast, four are devoted to a given subject in the classroom.

In all cases the telecasts are core components of the curriculum. In general, ITV production followed new curricula developed as part of the Education Reform as legislated in 1966 by Israel's parliament. Because of the association of television with the Reform, the spread of the new curricula--which in many cases involved new material as well as new methods and approaches--has been far more rapid than would have been possible otherwise.

The Transmitting Portion of the Israeli Television Operation

Almost all tasks involved in telecast production and transmission are carried out in the Television Center at Ramat Aviv. This includes writing, rehearsal and video taping of all programs, editing and development of original film, selection and dubbing of foreign films, construction of stage sets, and development of teaching devices. Selected classes of school children are brought to the Center for "product tests" of a new series. Teacher-training is based there, although additional regional centers have also been established, and periodic conferences of teachers, inspectors, and principals are held at the Center. A film library and archives have also been established. The printing of guides, manuals, schedules, and original filming are the only activities performed primarily outside the building.

The television building includes two studios, each roughly 220 square meters in size, with fully equipped production control rooms and auxiliary facilities. A central master control room serves both. Additionally, a photography lab, a paint shop, and a carpentry and welding shop can be found on the premises. A large room is available for conferences, meetings or rehearsals, with the library also being used for meetings or training sessions.

The staff was first selected and trained with the guidance of foreign experts brought to Israel for the purpose. Those selected for senior positions were given the opportunity to travel in order to observe instructional television systems elsewhere.

The engineering department was the first established. Most members of the technical staff are graduates of technical high schools, although few had further education in Israel or abroad. Most of the actual training, however, was on-the-job or in special courses organized for the purpose.

The Television Center's organizational structure has undergone several important changes and is not yet fixed. At present, the Center is divided into production, art, technical and programming departments, all of which are involved in the actual production process.

Curriculum is developed outside the Television Center itself, by the special unit established for that purpose by the Ministry of Education following the Reform legislation. Although in the first years of operation production teams essentially created new curricula, the current practice is to begin production only after the curriculum unit has completed its work.

A production team for a given series includes the following members: producer, director, assistants to the producer and director, presenter, script writer, professional consultant, subject coordinator, graphic artist, and a technical director.

Once telecasts are completed, pre-tests are conducted by the evaluation unit with school children similar to those for whom the telecast is intended. In planning programs, there is an attempt to consider the heterogeneity, attention span, and demand for variety on the part of the student audience.

In Israeli ITV, the teacher is the central figure in the telecast, even in the English lessons which rely heavily on dramatization. All teachers using television must take part in training and preparatory courses, either at the Center, or at one of the regional centers established to accommodate teachers living at a distance from Tel Aviv. No single pattern of teacher training has emerged, but the search for a optimal approach continues by ITV staff members who see this as the critical component in effective use of ITV.

It is too early to identify the long-range effects of ITV on Israel's educational system. Any attempt is complicated by the fact that its introduction has been closely linked to the Education Reform and, specifically, to extensive changes in curriculum as well as in school reorganization. (Because of these factors and a resistance to comparative evaluation involving control groups, definitive analysis regarding the effects of ITV alone is impossible.) Evaluation is obtained from all available sources of information--the pupil, the teacher, and observers. It concentrates on the total learning sequence, not only on the telecasts, although a special emphasis is always put on the effect of the latter.

JAPAN

Introduction and Purposes

The NHK Gakuen* is a special secondary program combining correspondence work with radio and television instruction. It is aimed primarily at young people who, for one reason or another, enter the job force prior to finishing their secondary education. However, enrollment is not limited to this segment of the population.

Organized in 1963 as an independent entity operating on a nation-wide basis, the NHK Gakuen is accredited by the Ministry of Education. It is only one of a large number of correspondence programs in Japan, which include others aimed at the same population sub-group.

The present report of Japanese instructional television is based on a visit to Japan in August 1969. By that time, NHK Gakuen had been operating its full curriculum for a period of 3 years and had graduated 5,348 students.

NHK Gakuen operates a 4-year program with annual cycles corresponding to the regular Japanese school year which begins in April and runs to the following March. NHK Gakuen is more than a name; there is an actual physical plant in Tokyo which serves as the administrative and operational center. In addition, there are 73 "cooperating" high schools throughout Japan. Students enroll and are advised personally at these locations. They pursue their studies individually, using correspondence texts and assignments which are supplemented by coordinated instructional broadcasts via both radio and television facilities of NHK. Further, students are required to attend at least 20 "schooling days" at the NHK Gakuen campus or a cooperating school. A number of students particiate at their places of employment with encouragement and partial subsidization from their employers. Some factories have provided viewing centers and VTR facilities to make repeated and more convenient viewing possible.

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*NHK is the popular designation of Nippon Hoso Kyokai--Japanese Broadcasting Corporation--the giant non-commercial public corporation for broadcasting in Japan supported by fees on receiver sets. (Gakuen signifies "high school.")

Through this program the student can complete in four years the entire Ministry-established upper secondary curriculum (which requires three years in a regular full-time high school). The diploma which the student earns upon successful completion of his courses entitles him to apply for university entrance examination.

Origins

Industry's growing needs for more highly educated employees and the manpower shortage have provided an impetus to a wide variety of educational and training programs. Correspondence education was recognized as early as 1948 by the Ministry of Education as a means of equalizing educational opportunities, both at the secondary and the university levels. By 1955 it was possible for a student to finish the high school course by correspondence and receive a diploma.

By 1966, there were 73 officially recognized secondary correspondence schools with 460 others designated as cooperating schools serving all prefectures. The vast majority of these were public schools operating correspondence programs in addition to offering regular classroom instruction; only seven operated solely as correspondence schools. The correspondence schools have become a significant element in Japanese secondary education. In 1949, 11,549 students were enrolled; in 1967 the enrollment was 136,299.

The NHK Gakuen was the outgrowth of a much larger-scale effort to extend upper secondary opportunities via correspondence work and the long-established NHK tradition of providing educational service. The corporation expanded its educational programming to include special courses for correspondence students as early as 1951. It was felt that such radio and TV programs would be a valuable instructional aid for students studying on their own; in particular it was hoped that they would combat the feeling of isolation and thereby maintain student motivation. The high attrition rate of general correspondence programs gave greater importance to this goal.

The NHK Gakuen was created to provide a broadcast program which would operate on a national basis and which would combine correspondence with broadcast lessons. The Ministry required schooling days and broadcast input to be coordinated in order to provide more effective instruction and reduce student attrition.

NHK Gakuen was established in 1963, theoretically as an autonomous entity, but with NHK itself providing the major impetus as well as financial means. Although it has its own Board of Directors, the school is heavily subsidized by NHK which controls appointments to the Board. The school receives an annual subsidy of Y300 million (approximately $830,000), constituting 90 percent of its operating budget. Further, key administrative staff members originally came from NHK and continue to have strong ties to that organization. Most important, the broadcast input is directly a product of NHK's educational program department which has a separate correspondence school broadcast division.

Scope

NHK Gakuen has an official capacity of 20,000 students. However, it has never reached that enrollment and for the last 3 years the total has been some 18,000. This, perhaps, reflects caution on the administration's part to prevent over-enrollment. The present policy is to limit each new class to 6,500, although it might be noted that there has not been a class this large since 1964 (the 1969 entering class totalled only 5,621).

A counseling staff has been set up to combat attrition which has remained high and is considered a major problem. However, the staff is small--only 8 outside of Tokyo. This means that, for the most part, in cases where a student is not attending schooling days or sending in exercises (thus signalling that he may be a potential drop-out), the counselor is able to contact him only by mail.

Since achieving its full 4-year operation in 1966-67, the broadcast schedule has remained basically the same. The scheduling of correspondence broadcasts was established on the basis of a survey of students on hours more convenient for them. For television the most attractive time period was found to be prime time, from 9 to 11 p.m.

NHK Gakuen has its own plant--consisting of a three-story office and classroom building, a two-story dormitory, gymnasium, and athletic field--located in a suburb on the western fringes of Tokyo. A main commuter line is available from central Tokyo and there is bus service from the train station to the school. Outside of Tokyo, students use the facilities of the 73 cooperating schools, one of which is within relatively easy traveling distance of any part of the four main Japanese islands.

By law, all correspondence students must attend a specified number of actual classes each year. In recognition of their use of the telecast input, the NHK Gakuen students' requirement is reduced to 20 schooling days per year. A unique feature of the NHK Gakuen is that, unlike most correspondence programs, the students not only must attend the schooling days on a regular basis, but are required to submit their written correspondence exercises on an established schedule rather than at their own pace.

The students come to the NHK Gakuen campus or their cooperating school about one day per month and in addition attend two school camps annually, each lasting 5 days and 4 nights. These camps are held at 8 locations over the nation on a staggered basis during normal school vacations, so that faculty from the Tokyo campus as well as the teachers from cooperating schools can participate.

Effectiveness

The fact that NHK Gakuen produced a graduation class after 4 years of operation and continues to produce a graduating class each year is evidence of success in achieving its objective of providing secondary education to students unable to attend regular schools for personal, economic, or institutional reasons.

The effectiveness of the total instructional offering is demonstrated by the fact that some 1600 students annually pass examinations which meet the criterion of the Ministry of Education for a high school diploma, and ten percent qualify for univerisity entrance. It should be noted that Japan has the advantage of having a national network reserved for education so that two hours of prime evening time each evening can be allocated to the correspondence program.

NEW ZEALAND

Introduction

The purpose of the New Zealand case study was to observe a long established program using radio broadcasts in a national educational system that is centrally financed and, in the main, centrally directed. Special attention was paid to education provided by the correspondence schools for students who are not able, primarily for geographic reasons, to attend schools offering the standard school curriculum.

Visits were made to Auckland, Wellington, and Christ Church in the spring of 1970. This time period corresponds with the end of the school year's first term for New Zealand students.

History of Educational Radio in New Zealand

Educational broadcasting in New Zealand began in the early 1930's at the request of teachers who saw the need for programs in music. With the support of the Department of Education, they approached the New Zealand Broadcasting System (NZBS) and were given air time. The broadcasts were organized regionally by volunteers drawn from the ranks of practicing teachers. They, in turn, enlisted the help of teachers associated with the development of programs primarily in music and music appreciation. The broadcasting authority took no part in determining what would be included in these early broadcasts, although it gave considerable assistance in presentation.

Shortly after the beginning of World War II, the teachers and broadcasters realized that the quality of the school broadcasts did not compare favorably with that of the other broadcasts of the NZBS. In 1942, the production of the educational programs was turned over to the NZBS and programs went from a regional to a national basis. During the next six years most of the country's schools were equipped with radio receivers, financed by local and federal funds on a 50-50 matching basis.

Coordinating its program productions with those of the rest of the NZBS, the educational division was able to obtain the services of the best writers, actors, and musicians available to produce programs which compared with the other NZBS offerings. Broadcast authorities feel that it is important to maintain this high standard because the students compare their school programs with those heard at home and because the program is on a national network which reaches an audience beyond the schools.

The Federal Government established that most of the NZBS educational division production staff would be drawn from the ranks of experienced teachers, and that an advisory committee comprised of both broadcasters and educators would provide the general guidelines, oversee the organization of the service, and review the manner with which the broadcasting authority discharged its new duties. The broadcasts were restricted to those subjects in the country's single common syllabus that required augmentation. In the 1940's, these areas were music, social studies, literature and science. The level and focus of the programs were directed primarily to country audiences whose isolation made their educational needs more acute.

Provision of the major share of supplementary printed material was accepted by the broadcasting authority. By the early 1950's, this body found that the cost of printing and distributing materials was beyond its resources. In 1952, the education authority took over the printing and distribution of all ancillary material, using the facilities of its publication branch. The preparation of the basic materials, however, remained a broadcasting authority function.

Until 1952, auxilliary material provided went almost exclusively to the students, and in accordance with the federal regulations, there was no charge for any materials.

When education began to share the costs of printing and distribution, program notes for teachers were developed. Today, the majority of the ancillary material is directed at the teachers, providing them assistance in preparing for and following up the school broadcasts. Attempts are currently being made to develop programs far in advance that need a minimum of ancillary materials so that these may be published and distributed in time for the programs.

The content of the school broadcasts and the style of presentation usually originate from and are revised on the basis of one of three sources: (1) requests of the Department of Education which are channelled through the advisory committee; (2) suggestions and requests from the teachers themselves; and (3) observations and data from NZBS educational division staff visits to and questionnaires sent the schools throughout the country.

The broadcasting schedule for 1970 still shows a heavy proportion of programs in the four subjects--music, social studies, literature and science--that were set up in the 1940's, when the broadcasting authority was given responsibility for the production of broadcasts. However, the emphasis in these programs is now much less a matter of direct teaching than it was earlier.

Currently, the programs tend to give depth coverage only in areas according to the teachers' requests for supplementary help. The school broadcasts presently focus on those programs which the educational division of the New Zealand Broadcasting Corporation feels that radio executes best: musical instruction and appreciation, current events, drama, poetry readings, and documentaries. Broadcasts are designed for certain levels within the schools.

Description of the New Zealand Educational System

There are approximately 3,000 schools in New Zealand, ranging from small country schools with one teacher to large city schools with enrollments up to 1,200 pupils. Almost half the schools in New Zealand have three teachers or less on their staff. These schools vary in their organization, some providing education for children from 5 to 13 years of age, others from 5 to 10 years of age, others from 11 to 13 years of age, and some from 11 to 18 years of age.

These different types of schools have in common an integrated national syllabus. Each school is free to organize its own approach to the syllabus; consequently, their time tables differ greatly. However, all schools must prepare the students to take the School Certificate Examination at the end of their 10th year of education. This standard examination is conducted by the Department of Education where a pass requires an average of at least 50 percent in four subjects, one of which must be English. These examinations are external to the school system and are given in November to students who have finished their fourth form, or 10th year of education.

There is a Minister of Education at the cabinet level of government, who has under him a Director General responsible for the day-by-day operation of the school system in New Zealand. Serving under the latter is a Director of Primary Education and a Director of Secondary Education. Under each of these directors are three district superintendents and three district senior inspectors. The inspectors are a group of educators who have been teachers and who periodically visit schools in their districts to evaluate and grade the performance of teachers. The promotion of teachers in the school system depends to a large extent upon the inspectors' evaluations.

The organization and operation of the school system in New Zealand is more formal and structured than that in the United States. For example, many students are segregated by sex at the grammar school level; most school children wear school uniforms through primary and intermediate school; and there is a necessity for the child to decide which curriculum he will follow in the 3rd or 4th form (the 9th or 10th grade in the American school system). These choices are necessary so that he may study for and take the School Certificate Examinations and later the university entrance examinations in his chosen subjects, and so be permitted to enroll at a university in the curriculum that will lead to his degree.

There is a wider curriculum today for secondary school students to choose from than has been available in the past. One educator estimated that approximately 38 different tracks or types of course work could be followed by secondary students in Wellington. However, many subjects offered in large U.S. high schools are not available, and there is little opportunity for a student to take part in extra-curricular activities for credit during school hours.

Much of the secondary school curricula is directed toward the School Certificate Examination. Little provision is made for special groups of students having cultural or geographic differences from the majority of students. It appears that such course work is not greatly needed, however, as most of the school student population are middle-class, English-speaking Protestants of Northern European origin.

When a child enrolls in the district school whose teacher or teachers are not qualified to teach a subject that is necessary for the student's curriculum, the student may take correspondence lessons at that school in the subjects that are not available. These lessons are completed in the classroom under the general supervision of the teacher, but are sent to the correspondence school at Wellington to be corrected and graded.

Scope and Content of the Educational Radio Broadcasts

Radio receivers are now available in virtually every primary and secondary school in New Zealand. Programs are broadcast from 1:20 to 2:00 P.M. each day from Wellington and are relayed over 13 stations throughout the north and south islands. It is estimated by broadcast officials that only a few schools on a few occasions are unable to receive a radio broadcast due to poor reception. In these cases, the National Audio-Visual Center in Wellington can provide tapes of the missed programs for these schools.

In addition to the regular school broadcasts, the New Zealand Broadcasting Corporation provides the correspondence schools with 20 minutes of air time each school morning (from 9:25 to 9:45 A.M.). These broadcasts go out over the national network and they may be listened to by anyone who has a radio. Also, a 20 minute program entitled, "Listen with Mother" is provided each morning for pre-school children and is used to some extent by 60 percent to 70 percent of the first year teachers as a bridge from the home to the school.

A series of programs, broadcast on Tuesday mornings from 9:45 to 10:00 A.M., titled "Liberal Studies" and designed to reach 11th grade students will be broadcast for the first time during the 1970 beginning term. In the third term, a series for 7th grade students called, "French Magazine," will be broadcast. This is the only expansion for the broadcasts that is envisioned for the next few years.

Funds for the school broadcasts produced by the NZBS come from the Office of the Postmaster General, which is responsible for all communications for the country. The approximate budget of the educational division of NZBS for a school year is $70,000. The supervisor feels that this amount is adequate because he is able to draw upon the general resources of the NZBS in producing programs.

CROSS-CULTURAL LESSONS LEARNED

Requirements for Introducing a Core Media Approach

An Adequate Rationale. A survey of programs using new media--particularly those using television--reveals a disheartening number which are failing to achieve their promise primarily because the promise is one of economic savings as the major rationale for the medium. In actuality, few instructional television programs have produced such savings. In the present series of case studies, the decision to use television was not based on economic factors--indeed, in most of these cases the media program was known in advance to be relatively expensive--but rather television was thought to provide unique potentials for attacking specific problems.

In Samoa, the government wanted to implement a total educational reform as quickly as possible with minimum displacement of the existing teaching staff. Massive use of television input was seen as the means of providing in-service teacher training concurrently with the introduction of better instruction for students. The Niger project sought to expand school enrollment despite an anticipated teacher shortage through the combined use of television and minimally trained classroom monitors. The Israeli program began as a means of improving instruction for disadvantaged groups, but then became a key means of speeding general educational reform.

The Australian, New Zealand and Japanese programs were all concerned with maintaining educational quality, morale and motivation among a student body outside the formal education system. The Japanese were concerned with helping drop-outs complete their education though employed, while the Australians and New Zealanders were concerned with geographically isolated students.

In some of these cases, the financial cost of using media was quite high but within the range of feasibility, given the intractability of the educational problem faced. It was recognized in advance that the program would be expensive, but it was felt that if the goals sought were achieved, the cost would be justified since achieving results of the same scope in any other way did not seem possible.

Because it is likely to be expensive, those making the decision to initiate an ITV program have a particularly strong responsibility to determine that there is an adequate educational rationale for using television without the false promise of substantial cost savings.

An Intensive Pilot Program. The programs in Israel and Niger provide a distinct contrast to that in Samoa regarding the plan for implementation. In Israel and Niger, a comprehensive pilot period was provided so that major elements of the program could be pre-tested; in Samoa, the program opened at full scale with no such pilot provision.

The fact that the Samoan program survived and apparently has made significant achievements in up-grading the schools could be used as an argument against the necessity for pilot programs. However, such a conclusion would be premature and misleading; it is apparent that some rather significant changes in the program are in the offing, and that these are likely to be extraordinarily traumatic and expensive. An early pilot program might have indicated the need for these changes at much less cost and trauma.

There are beguiling arguments which can be raised for skipping pilot programs and proceeding directly at full speed. Foremost among such arguments are the urgency of the problem and the expense of pilot programs. These are not sufficient--singly or in concert--for deciding against pilot programs. The delay necessitated by pilot testing need not be of such duration as to significantly prolong the problem, and the expense of the pilot is relatively small compared to the potential cost (financial and personal) of a full-scale fiasco which could be avoided by pilot testing.

A major attraction of television is its ability to "multiply" educational effort. As has been frequently pointed out, however, television per se is only a distribution system and will multiply good or bad efforts. This being the case, those in charge of instructional television systems are well advised to be sure that the efforts put into a general distribution system are both beneficial and effective--and only pilot programs can provide these evaluations prior to substantial investment.

However, there are caveats with respect to dangers facing pilot programs; these can become major if such pre-testing is prolonged. In Israel, for instance, the television program authorities were forced to modify their testing program because, once it was established that the program was effective and that the per pupil costs would be substantially reduced through economies of scale, both parents and politicians clamored for wider use. The recognized effectiveness of the program may have been due to the extended pilot period during which the program developers, free from budgetary and production deadline pressures, were able to produce high quality programming.

Thus, a pragmatic reality that must be faced is that an innovative program must fairly quickly begin making a visible and significant impact if it is to maintain momentum and, most importantly, financial support. Given the climate of unrest and dissatisfaction among the target groups of concern to this study, this lesson is particularly pertinent.

A Broad Base of Users. The requirement that a television program have a broad base of users has two aspects--the need for a large number of participants and the need for intensive use by those participants.

The relatively high cost of television hardware and software means that a large number of participants are needed to reduce the unit cost if the cost/effectiveness of the program is to be attractive. The Israelis, for example, found that their operating costs were almost the same for a program involving 1,000 schools as for 30 schools. On the other hand, the Samoan program has become caught in a situation where it cannot achieve optimal cost/effectiveness because it serves a small and highly isolated population.

In the Japanese, Australian and New Zealand cases the programs were designed for groups outside the regular school systems. Despite the fact that all three of these systems are dealing with relatively small sub-groups to begin with (relative to the total school-age population), none of the three have achieved anything approaching total use within those groups.

The other aspect of the broad base of users' requirement is to guarantee intensive use of the medium among those using it. Samoa, for instance, in large part compensated for the smallness of the potential population by making massive use of television by each student. The cost of installing and maintaining a TV set remains basically the same whether it is used one hour or twenty-four hours a day (and whether it is used by one student or 40). Thus in Samoa there was television input for every subject at every grade level every day. The Israeli program, having fewer channels available, provided considerably less intensive programming for each subject, but it still operated so that its more limited facilities were used by some students within each school each day.

The Japanese program could not expect such intensive use by its participants. For one thing, the students were fully employed and therefore had less room in their daily life space for the program. Also, they were (for the most part) using private TV sets and had to compete with other members of the family for use of the set. The program did, however, provide at least one lesson for each grade level each day, in order to encourage the student to establish a regular daily study routine. The program's research staff has shown academic performance to improve with regular use.

(Indeed, the positive relationship between student performance and frequency of use has been found to hold in most studies of ITV programs.)

Obviously, the most desirable cost/effective situation is to have intensive use by large numbers of participants. There are trade-offs, as described above, between intensive use and large numbers of students which, although not optimal economically, are at least tolerable.

An Evaluation System, Including User Feedback. Exponents of the systems approach to planning educational programs emphasize that an on-going, continual evaluation component must be included in a program as a means of guaranteeing that there will be a self-check on goal achievement. Such an approach involves at a minimum collection of base-line data on entering students, then measuring their performance during, and at the conclusion of, their media learning experiences. The case studies in the present research collectively support this position; they further provide examples of problems that can be anticipated when such an effort is mounted.

Samoa is a uniquely interesting case in point because it has been the object of both great publicity and controversy. Of the six cases it is the only one which did not build-in an evaluation effort. It seems clear that at least some of the difficulties encountered with critics, both in Samoa and elsewhere, could have been circumvented if adequate evaluation provisions had been made and objective evidence of accomplishments (and shortcomings) had been available.

All the other cases included provisions for evaluation to at least some degree, but the scope of their endeavors varied considerably. In New Zealand, mail questionnaires to teachers were used; in Israel, evaluation involved questionnaires, interviews, classroom observers, reports from and conferences with teachers, principals, inspectors, and a student achievement testing program. In each case there was tacit admission by those involved that the evaluation was less than adequate.

The Israeli program was formulated by a highly qualified group who manifested great concern for detailed and controlled experimentation and investigation during the pilot study. As mentioned in the pilot program discussion, this stance often drew objections from educational and political authorities on the grounds that such studies unnecessarily impeded the expansion of the program. The point is that as a program develops with apparent success pressure may mount for more rapid expansion which, in turn, restricts the rigorous testing desirable for a full evaluation. Conversely, there may also be a pragmatic danger that unless the evaluation staff appreciates the operational requirements of the program, its members may maintain impractical research expectations which become dysfunctional for the program. Strong administration seems necessary to keep all elements of the program--including evaluation--in proper balance.

Each of these cases encountered formal and informal resistances to evaluation. The forms of resistance were strikingly uniform from one case to another. In Israel, for example, until the program was firmly established within the educational structure, the research staff found it difficult to obtain the cooperation of schools, classes, and students which is necessary to meet sampling criteria needed for experimental validity.

Invariably, it was difficult to get users of ITV--both teachers and students--to make personal judgments about program effectiveness unless such evaluation was built into the routine of the total operation. Initially, response rates were discouragingly low; over time, however, a well-organized evaluation program was found to benefit in lowering teacher resistance and in building a feeling of "team" endeavor.

Resistance to evaluation was also encountered with the production staff itself. Evaluation staffs report that some production personnel failed to provide the information on specific learning points necessary to construct tests of effectiveness. Some researchers felt that underlying the lack of cooperation was a basic reluctance to submit to objective evaluation. On the other hand, some production staff members were firm in their belief that the evaluators could not measure educational impact, taking the stand that education and television are arts, not sciences.

A complaint generally found was that neither the producers and others involved in preparing the program content, nor the users--the teachers--took the time to read the evaluation research reports. Problems of research utilization were critical and strongly support the need for formal institutional requirements to assure operational support of evaluation efforts.

Techniques for Overcoming Resistance to ITV Utilization

Successful utilization of television as a core element in instruction plainly requires the cooperation of all those elements within the educational system upon which it will impinge either directly or indirectly. School system resistances to ITV utlization in the United States have been found to be wide-spread and critical in this country (Wagner, Lybrand, Reznick, 1969). Similar resistances were found in the international use of media covered in this study. The schooling-day teachers in Japan, for example, often ignored the television lessons which were to be coordinated with their own efforts; many classroom teachers in Israel felt threatened by the instrusion of the television teacher. In Australia, television for direct teaching was abandoned as soon as the classroom teachers acquired sufficient mastery of the new subject matter being televised. In both Samoa and Niger, there was antagonism toward the television effort on the part of highly placed officials within the educational hierarchy.

Such resistances were also manifested against ITV programs which sought to operate outside the established school system; officials of the systems felt threatened by the new "competing" system. In Niger, for example, school authorities perceived the television effort as diminishing their own authority and prestige and as implying weakness and failure within their establishment.

Past experience amply demonstrates the need to identify in advance the possible sources of resistance and to build into the media effort specific provisions for overcoming or reducing them. The present case studies suggest the following as major possibilities.

Structure Roles and Intensively Train Classroom Teachers. In media programs using a format in which students participate in a class or group situation, it is essential to have a teacher or monitor in charge. These persons constitute one of the strongest sources of resistance to the use of instructional media.

In programs which use paraprofessionals or otherwise create teacher substitutes where there is a shortage of appropriate trained personnel, the resistances to the full utilization of media is apt to be an unintentional result of inadequate initial training. In Samoa, for example, classroom use of the televised instruction varied in its effectiveness because classroom teachers were not adequately trained in their coordinating role and how they were to perform it. In Niger, on the other hand, the program was designed to employ poorly educated persons without prior teaching experience as classroom monitors; careful selection coupled with the training and supervision by the French program staff overcame this potential "resistance" and the indigenous instructors functioned quite effectively.

In programs where the class groups work under a well trained certified teacher, the problems take a different form. These educators, having more personal resources, frequently resent the intrusion of the outside television teacher into their classrooms and the loss of freedom the television lesson demands in terms of being able to vary the schedule of class activity and syllabus content.

An example of this attitude was discernible in the Japanese case, which provided for monthly schooling-days where the students received reinforcement and remedial work from experienced teachers. It was not impressed upon these teachers that they were part of a team, nor were they consistently supervised. As a result, there were many student complaints that the work in these sessions was not coordinated with the televised instruction.

In Israel a great deal of effort was expended to try to anticipate and reduce this type of resistance, seemingly with considerable success. It was stipulated that local school people would have to agree to participate in the full program--including compulsory training--in order to receive the television programming. In other words, a real and formal commitment to use of the program was set as a prerequisite. Teachers from participating schools attended intensive training sessions during which they were acquainted both with the content of the forthcoming television lessons and the intended preparatory and follow-up work they were expected to give their students. Further, the program was authorized to set up its own observer staff to visit classrooms to assess the programs' reception and use in the classroom setting and to maintain liaison with the teachers.

There was another aspect to the Israeli plan as well. In both the training and the supervision, great effort was made to seek the reaction of the classroom teachers and to encourage them to make suggestions and give advice, thereby giving them a creative and contributory role. Such efforts have been found generally helpful in reducing teacher resistance as they increase the teachers' sense of identification with the program and reduce the feeling that the program is being imposed upon them.

Develop and Maintain High Status for the Media Program Staff Within School System. The matter of status is another complex area which impinges upon various levels of program operations and its relation to the school system and the society. Any media program which begins as a poor relation, so to speak, within the educational family in which it operates, gets underway with enormous handicaps. Instructional television programs are complex and require careful coordination of many different persons conscientiously and correctly fulfilling their role. Without approval and support from the appropriate school authorities, the program cannot obtain the expected performance of school personnel.

In Samoa, the fact that the television program was able to effect massive impact upon the entire school effort in the long run can be attributed to the fact that the governor made a firm decision in favor of using television and used his paramount powers to override all official resistance from the school establishment. On the other hand, the Niger experiment failed to significantly affect that country's educational system because the program staff did not have sufficient status in the political-educational complex to prevail over opposition from the educational heirarchy.

To succeed, media programs must also have high status among its users--students and teachers. The case studies provide evidence that student attitudes toward a TV program of instruction in large measure reflect their teacher's attitude. In New Zealand, the students who profited most from the broadcasts were in classes of well-prepared teachers who could convey their own enthusiasm for the broadcasts and who could integrate them into their own classroom programs.

ITV programs in developing countries have generally benefited from the fact that television is not generally available and hence has a built-in status and novelty value. In Israel, there is a substantial contrast between the silence and concentration shown during the ITV lesson and that in the regular classroom. This is not necessarily true among American children. Various studies such as those reviewed by Chu and Schramm (1967) have documented that some children may resent its use for educational purposes, particularly in the classroom. However, there is also some evidence that the use of TV in the classroom may help extend the range of interest and lower resistance to instruction among children of lower ability.

The case studies once again bear out earlier observations that it is important that the tele-teacher have high status, at least in the sense of being perceived as expert and personable since the tele-teacher is the most visible part of the ITV program. To some extent there is a built-in status conferral: students and the general public have been conditioned to assume that if a person appears on television he or she must have distinct qualifications. Since teachers are apt to be viewing the tele-teacher as a peer, it is important that the tele-teacher qualifications be legitimate to establish and maintain high status from the classroom teacher's perspective.

In introducing ITV, most programs have been careful to seek highly qualified persons for the post of tele-teacher. The person with the highest academic qualifications, however, may not have the personal attributes and presentation skills needed by the effective tele-teacher. High status, then, is a mixture of respect based upon academic and television expertise, together with personability.

Parental (and general public) attitudes toward newly introduced media programs must also be considered. In Israel the ITV system quickly achieved high status among parents who then pressed for wider availability of its programming and thus constituted an important source of public/political support. In Australia, the Schools of the Air are typically established when a group of mothers in the outback contact the correspondence school in their state and ask that a School of the Air be integrated into the existing Flying Doctor Service in their area.

Ultimately, of course, any media program's success will depend upon its effectiveness and its value to societal goals--another argument for including a credible evaluation component. The enthusiasm for the Israeli program among parents and the diminishing of classroom teacher resistance was based in large part upon the fact that the program was indisputably improving the quality of education in Israel. In Niger, on the other hand, although ITV had been proven highly effective pedagogically and had achieved considerable prestige in international circles, the opponents in the educational ministry prevailed in curtailing the expansion of the program.

Student-to-System Relationships and the Learning Process

Reinforcing Learning. The findings of the case studies indicate that maximum impact is achieved where television is used in a group environment with coordinated program preparation and intensive follow-up of related classroom activity.

Using Classroom Assistants. One of the most significant findings is that television can enable persons without prior teacher training or experience to function effectively in classroom roles, after a relatively brief training period.

The Niger program, for instance, was designed to function using monitors who were young, poorly educated and lacking teaching experience. This was crucial to the primary goal of the program--to expand educational opportunity despite that country's lack of qualified teachers. With careful selection, training and supervision, the monitors proved remarkably effective within the project.

Both the Australian and New Zealand programs also devised additional resources and guidance to the monitors (usually untrained mothers) working with the isolated correspondence students, and to teachers in small back country schools who lacked expertise in some subjects needed by their students. This was done both through direct broadcasts to the students as well as through special broadcasts with coordinated materials for the teaching personnel giving them information and suggestions for helping their students.

Israel and Samoa used the television system to provide concurrent instruction to teaching personnel. In Israel this instruction sought to acquaint teachers with new syllabi adopted under a general educational reform. The Samoan effort taught new syllabi and specifically worked to up-grade the teaching abilities of school staffs. This occurred also in Israel, although it was not an explicit goal. The success of the classroom monitor training efforts in Niger and Samoa would seem to offer considerable promise for application in these areas.

In the Niger program it is reported that the use of monitors with whom the students could strongly identify in the classroom had a reciprocal function with the use of expert teachers on television. Student-teacher tension and potential hostility perhaps was diverted from the monitor to the more olympian television teacher. The NHK Gakuen program in Japan provided parallel findings, although in a different context. There, participants who worked in groups rather than as individuals, preferred to seek help and advice from one another and from group-originated leaders than from the trained personnel conducting the monthly schooling-day sessions.

One of the problems facing the American schools today is a shortage of adequately trained minority teachers who might bridge the gap presently existing between the traditional modes of education and disadvantaged students. It can be hypothesized from the findings discussed above that programs for disadvantaged minority groups might well benefit from a similar use of capable and motivated, though inexperienced and uncertified, monitors especially trained to use instructional television in group learning situations.

Integrating ITV Presentations and Classroom Activity. In none of the countries investigated for this report is the media input intended to stand alone or carry the entire educational burden. The actual amount of instructional responsibility resting on the media varies greatly. In those instances where there has been indisputable pedagogical success--Niger and certain portions of the Israeli and Japanese programs--emphasis has been placed on the need for strongly integrating the different elements of the program--media programming, work of the classroom, teacher/monitor and student exercises. In the less tightly supervised Samoan program, on the other hand, the effectiveness of the program appears to have been considerably more variable.

Specifically, the Japanese mathematics and English programs which have had the most careful pre-testing and analysis not only have produced the most marked results in terms of student learning, but also are the most regularly used. The Israeli program staff attributed much of their success to the mandatory training of participating teachers and the extensive efforts made to assure the commitment of the teachers and their principals to the total ITV program.

It is significant that one of the remarks--often a complaint--from participating Israeli teachers was that the use of the television program forced them to keep pace. The unstated implication is that the pace of the television input guaranteed the completion of the required syllabus during the term. In other programs both in the U.S. and other countries where there is less stringent inspection and control over the classroom teacher of the manner of ITV use, the same problems of pace have resulted in the classroom teacher dropping the television input. From the available literature, it appears that such complaints increase in school systems with highly qualified teachers who feel themselves equal to (and perhaps superior) to the tele-teacher and who therefore are resentful of this type of pressure.

Promoting an Active Student Role. The need for integrated exercises and classroom activities stress the necessity for user-involvement. Media use in the classroom need not be a passive activity. Indeed, chances for success appear to be increased by providing for the incorporation of student activities during the presentation.

As an example, the best Japanese programs include the stimulation of student responses to problems. In some cases it was simply a matter of having students read or sing along with the television teacher. In others the television screen was used to lead the student viewer through a series of programmed instruction. The Israeli program, too, frequently called for students to respond either in concert or with the classroom monitor calling upon individuals. The Israelis report great success through such means in creating a feeling of real personal identification between students and the classroom teacher.

The methods used in Niger not only called for oral response from classroom viewers during the lesson, but provided the outline for a lesson-connected "play" to follow the broadcast in which the students spontaneously rehearse the vocabulary and grammar being taught.

Teachers of the "Flying Doctors" programs in Australia used their two-way radio system to provide the opportunity for each isolated child to orally participate in the daily lesson, thereby building self-confidence and reducing the pupil's feeling of isolation. In the regular broadcast program for Australian correspondence students, "assembly" broadcasts feature either direct participation by selected students or reports on individual activities. These broadcasts not only provide recognition to individual students but encourage different types of learning activities on the part of all the students.

The question of student on-camera participation in televised lessons is an unresolved one. Various programs have reported that by using students the same age as the users in studio activities, the interest of viewing students can be heightened, and the studio teacher can be provided with a source of visible feedback. Some of the Israeli programs used students in studio classroom settings, but the reaction there was one of seeming annoyance among the viewing students and a reduction in the effectiveness of the television lesson.

Avoiding Scheduling Rigidity. Scheduling problems have proved to be the crucial factor on which more than one ITV system has foundered. The general problem of scheduling has several aspects which are common to all ITV programs for which distribution is centrally controlled.

The classroom teacher often finds it difficult to "orchestrate" the television content within the dynamics of classroom activities. While highly rigid scheduling is desirable from the strictly technical standpoint, it can disrupt the normal flow of classroom activities. It also constitutes one of the most critical sources of classroom teacher resistance to ITV. Further, depending upon the geographic dispersion of the participants, it may create difficulties due to the fact that groups are operating on different overall schedules, and perhaps even in different time zones.

There is also the aspect of providing opportunities for students to make up missed work or to repeat lessons, if needed. As the instructional load of the telecasts increase, the more critical it becomes for the student who misses part of the series to have an opportunity to retrieve the information, either by make-up viewing, or by remedial work presented individually to him by the teacher.

Where economically feasible, some systems are turning to the provision of video-tapes for the individual schools and classes, enabling the classroom teacher to use the television input at the teacher's convenience through the required syllabus. This method can also be used to permit students to view lessons missed. Another approach is that used in Israel: repeated scheduling of each lesson over a period of several days. In Japan, there was a similar repetition of critical series of lessons. One of the reasons for having the television and radio lessons for correspondence students in Japan duplicate one another was that a protective redundancy was provided: if the student missed the lesson on one medium, he could catch it on the other.

On the basis of generally accepted principles of learning efficiency, one would anticipate that short presentations would be more effective than longer ones. Indeed, what research has been conducted supports the theory.

However, despite the theoretical and experimental support, many ITV programs both in this country and abroad utilize programs lasting 30 minutes and even up to an hour. Unfortunately, the evidence which exists concerning the effectiveness of these programs suggests that their efficacy does suffer because of the inability of students to maintain a focused attention for that length of time.

It is significant that in all three of the present cases where TV was being used as the core for teaching in classroom environment the practice was to keep the televised portions brief. In Samoa most lessons ran 15 minutes. In Israel, most telecasts last approximately 20 minutes. In both Niger and Israel, program research supports the hypothesis that short, highly focused lessons are effective.

Some of the problems created by this approach to programming are explicated in the Israeli case. Perhaps the major problem--and the one which has probably been responsible for more programs violating the principle of short programming than any other--is that it does make scheduling difficult and complex. This holds true both for the television transmission center and for the classroom teacher. The Israeli approach to reducing this problem was to repeat each lesson with considerable frequency over the period of a week (in some cases over a fortnight), thus giving the classroom teacher flexibility in working the TV lesson into classroom activities.

In Samoa, where the use of television was more concentrated than in Israel--each grade received a brief TV lesson for every subject every day--the solution attempted was to leave the classroom receiver set turned on all day. Prior to the start of each lesson there was "warning" music or a visual image to alert the classroom teacher that the TV lesson was about to begin, and to give her an interval in which to make a transition. Such a practice probably encounters less resistance among poorly trained teachers, as in Samoa, than among the better qualified, certificated teachers that one would expect to encounter in many school systems of the United States.

Another dimension of concentrated TV programming concerns frequency of use. The Israeli case differed significantly from both those in Niger and Samoa in that there was only one lesson per subject per week, rather than one per day. Although the Israeli ITV seems to be producing effective teaching with this low order of frequency, the research literature suggests that the most efficient use of the medium generally requires a higher order of frequency. However, the Israeli program, like those in Niger and Samoa, does emphasize regularity of use. As mentioned earlier, it was found in Japan that student performance was positively related to the regularity with which they used the televised lessons.

The Israeli case specifically illustrates one of the disputes arising from an insistence on regularity of use. It was found that there were times when the classroom progress with the syllabus ran ahead of the scheduled television lesson. Some of the teaching staff argued that it would be better to skip the TV presentation. However, the consensus was that it would be better to maintain regular viewing even if the students had progressed beyond the television lesson. In these cases the televised instruction was sometimes used for review, sometimes for enrichment material which offered some reward to the students and helped maintain their general interest in school and in the television lesson series.

Three Critical Accomplishments

The use of media in Australia, Israel, Japan, and New Zealand, as well as in other countries, together have yielded three accomplishments that directly address key problems of the educationally disadvantaged groups of concern to this study.

Reducing Consequences of Sporadic or Partial School Attendance. Physical isolation, geographic mobility and lack of motivation for regular attendance contribute to the academic problems of the three disadvantaged learner groups of concern in this study. The set of case studies demonstrates that television and other media can help reduce the impact of these factors.

Both the Australian and New Zealand programs found the media input to be an important element in maintaining the morale and motivation of students in the isolated study groups outside the urban areas. In fact, in these two countries, the radio input has evolved into a principal medium for the socialization of geographically isolated young children.

In the Japanese case, the evidence shows that the incorporation of television instruction in correspondence education not only produced effective instruction, but also helped to maintain student motivation to continue education despite the considerable handicap of being fully employed and, for many at least, of pursuing an individual course of study without the support of classroom activity.

One of the factors leading to the establishment of the NHK Gakuen program was that the existing correspondence programs aimed at the high school drop-out population were not coordinated or standardized in different areas of the nation. This posed a considerable handicap for would-be students, since many moved from one area to another seeking employment. By providing a uniform program on a national basis, the NHK Gakuen made it possible for students to continue in the same series of studies despite such mobility.

Still another benefit of televised instruction was illustrated in Israel, where it was found that television helped reduce absenteeism. The Niger program produced similar results. It is worth noting that studies on American ITV programs have in some cases provided evidence that television input does help to maintain the interest of disadvantaged students beyond that normally shown in their ordinary classes.

Upgrading Instructional Skills of Teachers and Training Paraprofessionals. In the current literature on education of disadvantaged students, it is often suggested that the prevailing culture of the schools is an alien one for disadvantaged students. Much is written about the differences in meaning and values between students and their teachers and the impact of this disparity on the learning process. School systems seeking to modify this condition face a shortage of trained and certificated teachers who can maintain an effective student-teacher relationship.

Several of the present case studies suggest that schools can produce effective education for disadvantaged groups using uncertified, inexperienced teachers who have been trained for a supportive monitor role within a system of core television teaching. Indeed, this is the entire thrust of the experimental ITV system in Niger. The program staff in Niger felt that one of the strengths of their program was that the classroom monitors were local adults with whom the students could establish an easy rapport.

A major lesson drawn from the case studies is that training and re-training frequently encounters serious resistance from the educational establishment. If this resistance can be overcome, however, effective training of paraprofessionals and re-training of existing teaching staffs of varying skill levels in the use of media can be achieved in short-term training programs.

The Israeli ITV programs are used in classes where the teachers were generally experienced, although many were professionally under-qualified. It was found that teachers who used the television input did learn new and more effective classroom procedures and sometimes adopted ideas for producing additional learning aids for their classrooms.

In both Israel and Samoa, authorities were convinced that the use of television made it possible to bring about substantial reform and improvement of classroom teaching in a matter of one or two years instead of one to two decades. It should be noted that this effect must in part have been due to the special training also required for the participating teachers in Israel and the additional coordinated materials provided the teachers there and in Samoa.

Teaching Basic Skills Including Language and Mathematics. The case studies tend to corroborate the conclusion that television can be used for effectively teaching most subject matter. It does appear, however, that while some comprehensive systems were using television for almost all subjects, its most intensive use was for the teaching of mathematics and language. To some extent this was a result of the need in the school systems for far-reaching reform in the syllabus and teaching methods for these subjects.

The Japanese case study, for instance, reported that the correspondence students had traditionally encountered the most difficulty with the required secondary courses in mathematics and in English. In response, the NHK Gakuen devised programs based upon programmed learning principles which were experimentally proven to be effective. Student surveys showed that these series were most regularly used and most highly appreciated by the participants. It was also reported that students in other individual study programs were frequent viewers even though they did not have the written materials accompanying the broadcasts.

The Israeli schools used television to introduce the "new math." ITV program officials point out that in a two-year period the TV program effected changes in mathematics teaching which otherwise might have taken 10 to 20 years.

In Niger, the television program was also highly successful in teaching modern math to students. There, the instruction was conducted in French rather than the vernacular language. Indeed, the television instruction was used to thrust the students into an instructional program entirely in French, thereby giving them French as a useful, daily second language. Their accomplishments in this task appear to have been remarkable.

The possibility of using television to meet specific minority group educational needs, whether within or outside the traditional classroom context, therefore is an especially promising feature.

Television can function in two ways in meeting needs not adequately addressed by traditional teaching modes.

The Israeli program illustrates one approach. The original purpose of the ITV system there was to help equalize educational opportunities for disadvantaged students who migrated to Israel from vastly different cultural settings. The Israeli approach was to provide remedial work in an attempt at homogenization. The same television content in Hebrew was used for all students, regardless of background, in classrooms supervised by teachers, some of whom were similar in origins to their students, some of whom were not.

While the content of the television lessons was directed at educational problems that, generally, were common to all these groups, great care was taken in designing programs to respect cultural and psychological sensitivities unique to each group. The fact that the lessons were apparently effective with Arabs as well as both Eastern and Western Jews indicates that relatively culture-free content can be used among diverse disadvantaged groups. It should be noted that, wherever possible, the Israeli ITV programs did cast the educational content into a context which was familiar to the student viewers.

The Niger program illustrates a second approach. There, the ITV programs were to be designed for a relatively homogeneous group. In this situation the staff was free to cast the instructional content and the exercises into the everyday environment and activities familiar to the students. This helped make the information more easily comprehended by the students and also enhanced the development of self-confidence and local pride on the part of the students.

Further, the Niger program coupled television input with group supervision by specially trained monitors drawn from the group itself. Through these procedures, the Niger experience proved that the basic concepts of modern education can be taught effectively to children while, at the same time, teaching them a second language. Further, the television program appeared to have been far more effective for the majority of students than the traditional school program. The fact that the regular schools followed an alien (French) tradition suggests that they put the Niger students in a situation similar to that faced by at least some of our disadvantaged, particularly those who come from non-English speaking families.

CHAPTER IV

CONCLUSIONS AND RECOMMENDATIONS

INTRODUCTION

This chapter presents conclusions and recommendations on the potential use of ITV as a core instructional component--that is, for the basic instructional communications function--in the educational settings of the three disadvantaged learner target groups.

Core use of ITV does not appear to offer an economically sound potential for improving the education of migrant farm worker children. Given the mobile life-circumstances of migrant workers, the educational-delivery problems are too formidable for effective use of ITV.

The core use of ITV seems to offer a unique cost/effective potential for achieving significant reform in Indian education. In addition to its capacity for assuring high quality instructional content, its successful implementation would allow diffusion of a bilingual, bicultural approach to education in schools serving the Indians more rapidly than would be otherwise possible.

At this time, core use of ITV does not appear to be a feasible means of addressing key educational problems of children of the inner-city poor. A core ITV approach would not be uniquely efficacious in addressing basic skill deficits. More importantly, the scale of institutional resistance to total system conversion to a core ITV approach that would most likely occur, would be most costly to overcome, if it could be done at all.

Although core ITV is not recommended for the children of migrant farm workers or the inner-city poor, some other alternate educational strategies suggested themselves rather directly from the examination of the key educational problems of these target groups. Clearly, these strategies, which are sketchily presented in the recommendations section of this chapter, need further definition, analysis, and elaboration before they can be considered or evaluated as serious alternatives. Because they are not dependent upon the core use of ITV, the detailing of these alternate educational modes was deemed beyond the scope of this project.

CONCLUSIONS

ITV Use with the Educationally Disadvantaged Generally

This study has not attempted to document whether or not students can learn with television. Chu and Schramm have compiled and reviewed a mass of evidence on the effectiveness of television for learning.[1] In summary, they stated:

> In the great majority of comparative studies, there is no significant difference between learning from television and learning from conventional teaching; and where there is a significant difference, it is a bit more likely to be in favor of television than of conventional teaching (Chu, G. and Schramm, W., 1967, p. 9).

For the last ten years, many approaches have been tried in an attempt to overcome the complex of educational problems evident among the groups under study. By and large, the result has been a patchwork of various programs addressed to specific problems and ordinarily, separate from and superimposed upon, existing instructional systems.

On the assumption that the educational problems and needs of the three groups under study may require a more fundamental change in approach, the question posed in this study was: How effective might the core use of ITV be in solving these problems?

The introduction of a core media approach requires concommitant changes throughout the educational system--a factor which alone makes media introduction attractive as a medium for improving education for the disadvantaged in the United States. This is so simply because it seems to have become generally accepted that it is the overall configuration of the existing school system, not just a bit or piece of it, that is related to the poor educational performance of many students outside the mainstreams of society.

Although the core use of ITV is recommended for only one of the target groups, the evidence is clear from both national and international uses of ITV: in whatever mode--supplemental, enrichment, direct teaching of single subjects, or total core use--proper use of ITV can improve instructional quality in diverse educational settings.

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[1] In 1962, Schramm summed up 393 experimental comparisons of television versus classroom teaching and reported that in 255 of these comparisons, there was no significant difference, 83 showed significant differences in favor of televised teaching and 55 in favor of conventional teaching. In 1967, Chu and Schramm published their findings from 207 published studies. Of the 421 comparisons made in these studies, 108 showed no significant differences, 63 showed television instruction to be superior, and 50 found conventional instruction better (op. cit., pp. 9, 10).

Positive Impact on Instructional Quality

One of ITV's obvious advantages--its capacity for distributing widely the best teaching, presentations, and demonstrations--makes it useful for learning situations in which it may be difficult to recruit and retain special teaching capabilities. Traditional classroom learning is completely dependent upon an individual teachers' competence because the teacher is at the center of the instructional process. However, an ITV system can be designed as a relatively self-contained instructional package (as it is in Israel, Niger, and American Samoa). The presence of an adequate, self-contained instructional program reduces the subject matter expertise required of the teacher, shifting emphasis to the skills required in fostering an optimal learning environment. Such an environmental management role is likely to be more challenging, to many teachers at least, than their present instructional roles.

Another aspect of ITV's use for improving teacher effectiveness is that the teachers themselves can learn how to present material well by watching the studio teacher. In those instances where the teacher is charged with guiding a class through subject matter he is not adequately prepared to teach, the support and guidance afforded by the studio teacher's example is welcomed. Obviously, it is less welcome to the teacher who perceives himself as a specialist in the field.

Even though ITV can compensate for subject matter presentation deficiencies, it cannot stand alone. The case studies corroborated the previously established common-sense observation that students' learn best in groups and that the effectiveness of the television presentation is most dependent upon the teacher's skill in integrating it into classroom activities.

The in-service training necessary for ITV utilization can very easily be expanded to include programs to sensitize teachers to their pupils' particular needs and to familiarize the teachers with recently developed pedagogical techniques for use with children who have learning problems. Using ITV as a vehicle for in-service training of teachers can be an especially important contribution of the medium, since it is only recently that teacher training institutions have included such "disadvantaged learner" pedagogical approaches as part of their curriculum.

One of the commonest arguments for introducing media is that the students will receive more individual attention of the teacher because the telecasts will free the teacher from much of the "nitty-gritty" of instruction. From the literature and the experiences of teachers in countries where television is being used, it is clear that effective use of television requires a good deal of preparation on the part of the teacher, and active classroom monitoring, as well as enthusiastic support. Thus, if the teacher is to perform other counseling, diagnostic, and remedial functions, adequate additional manpower will have to be made available for the monitoring and integrating instructional role in the classroom.

Basically, ITV's contribution lies in its capability of making the learning process more efficient. Its use can allow the introduction of activities that are now secondary in traditional education. Work-study programs or special interest projects which are now frequently by-passed because they are not readily performed in the classroom are feasible where ITV programming is successfully used to compress the presentation of basic subject matter.

Accommodating Diversity in Educational Settings

Most educators recognize that a great deal of learning goes on outside of the classroom, and some are going so far as to set up "schools in the streets," or in used community buildings. ITV can fit into such radical departures from traditional schooling very well since it is a way of efficiently providing the high quality basic instructional content needed to assure a firm foundation for learning. With ITV, school can go to the student rather than the other way round; ITV does not require a typical four-wall, classroom building to be effective. This capacity seems obviously efficacious for students whose families' mobility, or geographic isolation, prevent access to the full range of educational services from the traditional system.

But this capacity can be equally important for economic, psychological, social, and cultural reasons. ITV has been observed to "work-around" the negative affect that many disadvantaged students attach to the educational and instructional process in general, and to the teacher in particular. As David Riesman has pointed out:

> ...for a black student who feels that a white teacher is subjecting him to a counterfeit nurturance and thus making him even weaker and more deprived, or for a lower class white student who feels a similar uneasiness at being helped, the machine can be a marvelously neutral substitute (Commission on Instructional Technology, 1970, p. 30).

Teachers and others in an ITV production can be selected for their potential role-model attractiveness to the target student group. In Niger and American Samoa, native studio teachers are used quite deliberately to help the students identify with, and get involved in, the ITV presentations.

In summary, ITV reception can be established in locations, and with monitors and other personnel, that provide an emotionally supporting environment in terms of the cultural milieu of student target groups, such as in neighborhood viewing centers, or in work locations (presuming cooperation of employers). ITV does not require, although it can be effectively utilized in, traditional school room structures--physical, geographical, or administrative.

Core ITV Use with Migrant Farm Worker Children

The Migrant Farm Workers' Life Circumstances Preclude Efficient Use of ITV. A core use ITV system would not provide the basis for solving key major problems of migrant education. The unpatterned job-dependent movement and the effects of the particular kind of social isolation which characterize migrant farm workers' lives are not sufficiently congruent with the requisites of operating an instructional television system to make a core ITV strategy an efficient solution to migrant education.

Potential Benefits from the Core Use of ITV. With ITV:

1. "School" can go to the children in the migratory streams rather than the other way round;
2. The pre-formed content assures structure and continuity useful in off-setting the effects of sporadic school attendance;
3. High quality instructional content can be assured;
4. The "machine neutrality" of television instruction could conceivably offset the negative affect of classroom relationships often found in the regular school systems.

However, closer examination of the migrant farm worker situation reveals that delivery of instruction to the child (as opposed to school settings) is not likely to be accomplished with ITV any more than any other system--and thus all the potential benefits are not likely to be realized.

Factors Contributing to Delivery System Problems. As was pointed out in Chapter II, migrant farm workers do not move in regular, predictable patterns. They move according to the readiness of the crop and the availability of work. Much time is spent traveling from one short-term job to another. Even at a single harvest site, their job moves infrequently coincide with school district jurisdictions. As a result, the children, if they attend school at all, must change schools frequently. Furthermore, because the parents subordinate all else, including their children's schooling, to economic survival, migrant children often care for younger siblings while their parents work, or work in the fields themselves to supplement the family income.

Even with ITV viewing centers located at work-sites throughout a multi-state area, it would be exceedingly difficult to assure sufficiently regular sequential attendance by the students for them to gain the benefits of the continuity and quality possible with ITV presentations.

The character of the migrant work force apparently is changing. It is reported that: a fifth of the members of the migratory stream now travel over 1,000 miles to do farm wage work; around two-thirds work only in their home-base state. However, the exact nature of migratory movement has yet to be fully identified. Because of this information lack, it would be difficult to select optimal sites for transmission facilities. Furthermore, since the need for hand labor is diminishing with the increasing mechanization of agriculture, the numbers of migrants will decrease.

The migrants are not a single sub-culture. The language needs of the Spanish-speaking portion of the migrant work force would dictate bilingual programming which would not be appropriate for the Anglo and Negro migrants. Because of the linguistic and cultural differences present within the migrant worker group, it would be difficult to achieve the economies-of-scale that typically accrue to the use of a large-scale distribution system.

A core ITV system would be an expensive approach to meeting the differing compensatory education needs of a diminishing population.

An Alternate Educational Strategy for Migrant Farm Worker Children. In the course of exploring the feasibility of a core ITV system for migrant farm worker children, a number of reports describing compensatory education programs for migrants were necessarily reviewed. Although an analysis of these programs was beyond the purview of this study, it became evident that a variety of helpful programs are being developed.

However, most of the programs are concerned with children in the-on-the road phase of the migrant life cycle. When the circumstances of life en-route are considered, it would seem wiser to concentrate on establishing special classes in schools which have substantial (relative speaking) migrant children "home" populations. These classes would be especially designed for the student populations served and would provide instruction in basic subjects during the four-to-six months the children are at their home bases. The existent programs for children on the road would continue, of course, but could emphasize supplemental, enrichment, or remedial work in shorter curriculum units. Instruction involving long sequences of new learning in basic skills does not appear practicable given the circumstances of the migrants' life on-the-road.

ITV is not suggested as the optimal delivery mode for the four-to-six months concentrated program being suggested because of the geographic dispersion of the childrens' home bases and because systems which would not require the cost expenditures of an ITV system can be devised, using the information and experience available from the existing remedial programs referred to earlier.

This idea obviously needs further exploration before it can be recommended for consideration as an educational strategy for meeting the educational needs of migrant farm worker children.

Core ITV Use with Indian Children

Past Media Experience Non-Conclusive. Very little research has been done exploring the potential of ITV for American Indian students. In one instance in which closed circuit television was used in conjunction with an innovative teaching system for Indian children, the technique was unsuccessful. Vincent Kelly, in a paper for the Commission on Instructional Technology, reports:

> At one elementary school for Indian children a highly elaborate teaching system was set up under the direction of a private company. Daily tests were administered on the concepts that had been taught in each subject area. The results were processed by a computer and a print-out of the conceptual areas in which each child was deficient was given to the teachers before the beginning of school the next day.
>
> At the same time, several hundred films had been catalogued according to the concepts presented. The computer searched out the films which corresponded to the areas in which most of the students appeared deficient. The relevant films were transmitted by closed-circuit TV throughout the school. Teachers could make the choice as to whether they wished their class to view a film, which film, and when.
>
> The elaborate program was discontinued the next year much to the relief of the students and the teachers. The term "concept" had not been sufficiently defined; many of the films which were to teach specific "concepts" actually were irrelevant to the teachers' purposes; or the film took much too long to achieve what the teacher could do alone in a matter of minutes. Observers reported toward the end of the school year most teachers left their TV receivers turned off all day long (Commission on Instructional Technology, 1970, p. 94).

It is clear that the failure of this experiment was not due to any intrinsic properties of the medium, but to inappropriate program development. The content did not reflect teacher requirements, nor was it based on the previous learning readiness and learning styles of the Indian students. It appears that the exciting and innovative feature of daily progress assessment of students, and feedback of these results to teachers, led to an overlooking of many previously established principles of ITV program development and utilization.

Core ITV Can Address Key Educational Problems of American Indian Children. The Federal schools are frequently criticized for the poor quality of instruction, for the inadequacy of their staffs, for the limited use of culturally relevant materials, for deficiencies in their language teaching, and for their failure to involve the Indian communities in the education of their children. Many of the same criticisms can be levied at the public schools which are attended by two-thirds of Indian children. By and large, they have not developed approaches appropriate to the cross-cultural teaching situation that they face, nor have they found a means of effectively encouraging Indian parental support of the schools or of their children's education.

A core use of ITV offers a means for addressing each of these criticisms. The programs and materials used can be of high quality with no chance for a dilution of their effectiveness because they can be brought directly to the student.

The telecasts themselves, the supporting materials used for learning reinforcement in the classrooms, and the teacher training required for effectively using television in a learning situation can all be designed according to the requisites of a bilingual, bicultural approach to education. Some schools are now using culturally specific materials and Indian language texts and there is extensive experimentation in teaching English as a second language. The media system can draw upon this experience to develop an appropriate ITV curriculum and bring about a more rapid diffusion of effective techniques than would otherwise be possible.

Each of the case studies included in this report indicated that the success of an in-school ITV program depended heavily upon the skill of the classroom teacher/monitor. The conclusion is inescapable: the teacher/monitor must be specially trained to use television in the classroom. Both the Niger and the Israel experience show that this training is best done by the same organization that prepares the programming. If the Federal schools for American Indians were to adopt an ITV approach, an ideal opportunity would arise for training teachers in cross-cultural pedagogical techniques, as well as in "tele-pedagogy." Such training might very likely improve the quality of all interactions in the classroom, as well as insure optimal media use.

ITV can also be used to get around the problem of shortages of appropriate teachers in Indian areas. The college-trained teacher would no longer be absolutely essential because the need for subject-matter expertise would be diminished. Since the television programs and the coordinated supporting materials can carry the brunt of the instructional load, teacher recruitment could concentrate upon finding persons who are temperamentally suited to living in isolated areas and to working in a cross-cultural education system.

ITV also can be used as a means of bringing more Indians into the school system in a variety of roles than is likely with the present policy of requiring at least an A.B. to teach in an Indian school. As was pointed out in Chapter II, only 18 percent of the Federal school graduates enter college; of all Indians who enter college, only 3 percent graduate against a national average of 32 percent. With such a college completion rate, it is highly unlikely that Indian schools will have a sizeable proportion of Indian teachers in this century. However, the Niger experience particularly indicates that a pedagogically superior educational system can be designed using a combination of indigenous monitors and imaginative ITV. Some practices have direct transfer potential, such as the use of:

1. relatively untrained monitors to guide classroom learning;
2. culturally relevant materials with which the children can readily identify; and
3. curriculum presented with well designed scripts using actors rather than fully qualified, academically trained teachers.

In Niger, the monitors were selected for their personal qualities, their liking for children, and according to informants, for their lack of teaching experience. Since they were not teachers, the Nigerian monitors had few preconceived ideas on how a classroom with television was supposed to be run. This may have contributed to their willingness to take complete direction and guidance from the French experts who managed the system.

The experience in Niger also has a valuable negative lesson. The French experts dominated administration of the system and failed to develop the indigenous management expertise that might have allowed the system to expand beyond the pilot state. On the American Indian reservations at this point in history, it is unlikely that any new educational approach will work unless it contains adequate provision for training Indians to take part in the system and to assume control of the system as soon as they can acquire the requisite competencies.

In summary, then, ITV appears to be a superior means of effecting significant reform in Indian education because no other approach seems to address key problems as efficaciously. ITV can:

1. improve the quality of education through bilingual, bicultural instructional approaches;

2. work around the shortages of qualified, temperamentally suited teachers;

3. involve the Indians themselves in the education of their children in a significant way;

4. provide a vehicle for training teachers and staff in cross-cultural communication and interaction techniques.

Core ITV Use with the Inner-City Poor

ITV Not a Suitable Change-Agent in Inner-City Educational Circumstances. A core use media system is not a feasible means of overcoming the educational problems of the inner-city poor at this time. The circumstances of the inner-city educational environment and the scale of resistance that can be expected with the introduction of any alternative instructional mode which would require major systemic changes for effective implementation are sufficient to preclude recommendation of the adoption of core ITV. Basic changes are needed, but ITV offers no unique advantage in achieving such changes.

Factors Interfering with Accruing Potential Benefits of Core ITV Use. With ITV, it is possible to provide high quality, strongly structured, uniform instruction to all students in a system, thereby overcoming some of the major problems arising from: sporadic school attendance on the part of the students; inappropriate curriculum; and teachers who are unable to function effectively when confronted with disadvantaged learners. Since ITV is a natural (if not unique) medium for imparting information via demonstration and/or dramatization, it could reduce the students' need for verbal and reading skills--areas in which many inner-city students are deficient. The introduction of ITV would provide a means for bringing paraprofessionals from the same cultural milieu as the students into the schools in significant roles. With the ITV input, the paraprofessionals could take over much of the presentation and drill involved in teaching, and, with appropriate training, might even be able to serve as monitors.

However, these potential benefits are offset by other considerations.

Using any instructional mode to accommodate deficiencies in reading or other basic skill areas seems highly inadvisable. As Kenneth Clark has strongly advocated, there is a need to face such skill deficits head-on with an intensive program focusing on the logical, sequential development of cognitive skills which stresses increasing proficiency in reading and mathematics. Instructional television might be useful in such a remedial program but it would be an increasingly costly alternative. What is required is that a school system as a whole commit itself to achieving that goal, even if it involves foregoing school-as-usual.

Introducing a paraprofessional to monitor in-class ITV sessions impinges on the teachers' primacy in the classroom. In spite of the fact that the paraprofessionals' presence in the classroom might have a positive influence on the affective character of the classroom, it is highly likely that their presence would be perceived as threatening to teacher status.

Teacher resistance is a factor which must be taken into account in troducing any major educational innovation, including ITV.

As the Israel case demonstrates, teacher resistance can be overcome if the ITV system (1) provides a clearly superior instructional package backed up by specific training in the use of television in the classroom, (2) actively enlists teacher reactions and contributions, and (3) is sensitive to existing status relationships in implementing its program. These are formidable obstacles to the efficacy of a core ITV approach in the inner-city.

An instructional package that was generally perceived as superior would be extremely expensive to produce since the students' and teachers' expectation levels of program quality and attractiveness would be set by commercial television. Educational programming is rarely able to match the attractiveness of commercial efforts. The popular Sesame Street designed for disadvantaged pre-schoolers, draws heavily upon the techniques used in television commercials to get across their educational input. The first 26-week series of one-hour programs cost some $8 million, an expenditure being justified by its audience of some 8 million (many of whom are middle and upper middle class children).

There is, secondarily, the possibility of a boomerang effect in using professional quality programming. The negative affective character of the student-teacher relationship in the inner-city schools could be unnecessarily exacerbated by unjustified student comparisons of the classroom teacher with the tele-teachers.

Though the introduction of a core ITV system would be a convenient time to provide comprehensive in-service training, it is not a necessary mechanism for accomplishing this goal. Since approximately 30% of the teachers in metropolitan school systems have master's degrees, they would resist what they might perceive as an insulting training program.

However, the most important argument against following the Israeli model for overcoming teacher resistance is that strict adherence to existing status relationships within the existing organization would preclude the possibility of achieving the major reforms needed.

The Role of ITV in Special Purpose Programs in the Inner-City. Although the core use of ITV is rejected as a viable solution to inner-city kindergarten-12 grade level education problems generally, ITV could be used in important ways to meet the educational needs of "drop-outs" and to enlarge the scope of vocational training.

Each year, thousands of inner-city high school students leave school prior to graduation. There are alternate routes to completing secondary education, but generally they require a high degree of motivation on the part of the students and, often a willingness to return to the school setting which in itself is often a major contributor to the drop-outs' aversion to education. Because of the age-graded structure of the school system, even a two-year absence is often a major barrier to returning to school. In short, completing the course work required for a high school equivalency certificate requires a degree of motivation not ordinarily found in school-leavers.

The use of ITV has three major advantages for meeting the educational needs of school drop-outs. With an ITV system:

1. Instruction centers can be based at work-sites or community buildings rather than in schools;

2. Lessons can be repeated to accommodate students' irregular employment schedules and to provide opportunity for review;

3. Instruction center personnel could be selected for their potential capability for achieving rapport with the students rather than their academic qualifications.

Drop-outs who want nothing more to do with school *per se* might be very attracted to a high school equivalency program *not* located in a school building. Since the drop-outs' job options are so limited, their work schedules are often too erratic to allow for regular attendance in either day or night schools. An ITV system with frequent program repeats could make regular attendance easier. The paraprofessional, trained for his "learning guide" role, from the same cultural milieu as the students, might well be more effective in motivating students than the academically qualified teacher attempting to bridge the cultural gap in the traditional school setting.

Because the drop-outs represent only a portion of the inner-city population and because the use of ITV for direct teaching is only incidental to the educational format needed, a detailed description of a schooling plan designed to fit their needs is outside the scope of this project. However, the literature review and the case studies conducted as a matter of course in preparing this report do imply certain approaches.

The instructional inputs--the programming, the program-cued student lessons, the examinations, and the staff materials--could be developed on a sufficiently large scale to assure their cost effectiveness. Existing regional educational laboratories in the U.S. would be logical organizations to design and manage a media based high school equivalency program composed of a number of locally operated, small viewing centers throughout the country.

These locally operated small instructional centers would require a management committed to the idea of operating an educational system to fit the needs of students who have failed to cope with the demands of the regular school system. Because failure has already occurred in a traditional school setting, it would be important to keep the atmosphere as unschool-like as possible with the constraint of the necessity for conveying the academic skills needed for job holding, training, or further education. The centers also would require an administrative staff capable of capitalizing on the flexibility technologically possible with ITV and a professional guidance staff skilled in group dynamics to train and supervise the paraprofessionals who would be working with the students themselves.

Many inner-city "drop-outs" lack the intrinsic motivation and learning know-how to complete a high school equivalency program. Because of the need for strong, regular support of their efforts it is necessary to build strategies into the system to insure students' regular sequential viewing and lesson completion. These would include: (1) reliance on study group sessions conducted by paraprofessional "learning guides" and a group-selected leader; (2) a defined, required learning sequence; (3) frequent opportunity for review and consolidation through flexible scheduling; (4) regular, private personal checks on student progress; (5) the availability of individual remedial instruction; and (6) where needed, supportive counseling.

ITV might also be used to supplement basic pre-vocational and vocational training. ITV programming could provide (1) demonstrations of industrial procedures and processes; (2) occupational information; and (3) practical vocational guidance.

The system concept roughly outlined above, involving direct and supplemental use of ITV needs further definition and elaboration before it can be offered as a recommended educational strategy for inner-city "drop-outs."

RECOMMENDATIONS

It is recommended that a pilot project evaluation be made of the feasibility of accomplishing large-scale curricular reform of American Indian education through core use of ITV. The remainder of this section spells out aspects of this generic recommendation.

Summary

A six-year experimental pilot project is proposed to develop and test the core use of ITV in curriculum reform of the kindergarten through second grade levels of Indian education. A bilingual, bicultural curriculum would be developed which would draw upon the experience of the few schools seriously using this approach and which would use ITV for the basic instructional functions. The system would be tested first with Navajo children in selected Federal boarding and day schools and in experimental viewing centers established in areas not readily served by day schools, then in public school systems with large numbers of Navajo children. Assuming a favorable evaluation, the latter part of the pilot project would include planning for diffusion of the innovation to the rest of the Navajo children--in Federal schools, viewing centers and public schools--and for adaptation of the system to other Indian tribal groupings. The entire pilot project would be conducted in the context of a 16-year plan for developing a kindergarten-12 operational system.

Assumptions

Four assumptions are made with respect to the proposed educational reform.

1. An Indian review board will concur in the potential of a core ITV system for Indian children, they will support pilot evaluation of the system with Navajo children, and they will agree upon the membership of a Board of Directors to oversee the pilot evaluation.

2. No legal or other jurisdictional problems exist which prevent initiation of the educational reform effort in Federally controlled schools.

3. Funding for the development of the system, including the pilot project, will be available from other than current operating budgets--and that funding sources will include the Federal government, private foundations, and tribal funds.

4. The "Indian Financing Act of 1970" will become law. Under this legislation an Indian community would be empowered to "take over the control or operation of Federally-funded and administered programs in the Department of the Interior and the Department of Health, Education, and Welfare whenever the tribal council, or comparable community governing group, voted to do so," (Presidential Indian Message to Congress, July 8, 1970).

Preliminary Actions

It is recommended that, as a first step, a project Board of Directors be established which will review the rationale for the ITV system concept and, assuming their concurrence in the worth of this approach to Indian education, be further involved in the management of the program during the system's subsequent development and operation phases. This Board would necessarily include as members representatives of the major Indian tribes--and particularly the Navajo--as well as public, quasi-public, and private organizations concerned with upgrading Indian education.

Assuming a favorable reaction by this Board to the core ITV concept for Indian education, the Board could develop a detailed implementation proposal on the basis of planning and feasibility studies beyond the scope of this research (e.g., engineering and location studies to determine the feasibility of a 2500 megaHertz transmission system). This proposal would refine the pilot project design and cost estimate of $7,268,000 for the six-year period (presented in this report) and would thereby provide the documentation necessary to obtaining the support--political, legislative, administrative, and fiscal--to execute the proposed pilot evaluation.

System Overview

An ITV system is envisioned which will provide the basic instructional function for grade levels kindergarten through 6, in which a bilingual, bicultural curriculum approach would be utilized. The curriculum at subsequent 7-12 grade levels would be in the English language and would reflect the cultural approach of U.S. intermediate and secondary education generally. Instruction in the upper secondary grade levels would include vocational training tracks as well as a college preparatory concentration in order to allow the Indian student the wherewithal to make a real choice between reservation life and his version of assimilation into the predominant urban society.

In the kindergarten-6 grade levels, the ITV educational system would be utilized in the Federal boarding and day schools, and in special viewing centers established in remote areas on the reservation.[2] The former would insure uniform high quality instruction; the latter would serve the children living in areas considered too sparsely populated to build day schools. In both situations, but particularly in the viewing centers, maximum use will be made of specially trained Navajo as classroom monitors. These small viewing centers would serve as feeder schools to both Federal and public schools at higher grade levels. All 7-12 grade levels would be in the Federal boarding and day schools, or in public schools.

The ITV system would be utilized for classroom teacher-and-monitor training in use of the new curriculum and the ITV medium. This would specifically include training in cross-cultural pedagogical and human relations techniques. The ITV system would also be utilized to provide continuing education to dormitory aides at boarding schools in their parent-surrogate role functions. In addition to this more intensive training of aides, other non-classroom reforms needed to improve the learning environment in the boarding school would be effected: a reduction in the student-to-aide ratio; an expansion of recreational activities; an increase in the number of guidance counselors and clinical psychologists.

A single Television Center is envisioned for the Navajo area, located geographically near some Federal boarding and day schools, which can be used for research, development, and evaluation purposes. The Center would house the system's central administration, the curriculum planning and development unit, the program production unit, the research andeva evaluation unit, the teacher/monitor training facility, the transmission facilities, and a system maintenance (hardware) unit.

The Center would be staffed by experts in curriculum development, ITV program production, teacher training, and educational research and evaluation who would be drawn from the national scene. In addition to the educational and communications disciplines obviously implied, the staff would include linguists, anthropologists, psychologists, and other social science disciplines necessary for the bilingual, bicultural approach proposed. In addition, the Center staff would include a number of Navajo Indians of various backgrounds, educational levels, and ages, which would participate in, and contribute to, all phases of the Center's development activities. The operational development plan would include provision for awarding scholarships and grants to Navajo youth to obtain the higher education, experience and expertise required to staff the Center. With this approach, operation and maintenance of the system after the 16-year development period would be in the hands of a predominantly Navajo staff.

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[2] The latter idea is an elaboration of one of the many alternatives suggested by Abt Associates whose on-site, investigations were described in Chapter II.

The Television Center will be the major source of curriculum materials for public school systems wishing to use ITV programs to improve their educational offerings to Navajo students. Some of the programming developed specifically for core ITV use with Navajo students on the Navajo area would be adapted for use in public schools. In the public schools, of course, the ITV programs would be used in a supplementary mode, providing direct teaching of some courses, but not assuming the central instructional role of the teacher. Programs dealing with Indian history and culture could be dubbed into English for even more general enrichment use in the public schools as part of an effort to develop a mutual acceptance and respect of each other's culture and language. To help prevent Navajo students with an inadequate mastery of the lower grade curricula from dropping out, the public schools could set up supplementary remedial programs using curriculum and materials developed by the Television Center.

In addition, during the pilot phase, an assessment can be made of the feasibility of using the ITV system for preschool language, socialization, and learning readiness programs, and for adult literacy and other special education programs.

Because the materials will have been developed with Federal funds, there should be no problems with copyright laws in providing ITV program tapes and other supporting materials to the public schools. The latter could be encouraged to utilize the materials available at the Television Center by making Federal funds provided for services to Indian students under the Johnson-O'Malley legislation contingent upon their use of curriculum offerings designed specifically for Indian students.

System Development Strategy

The proposed ITV system ultimately would be established for all Indian children on reservations; this will require different programming for different tribal groupings at the kindergarten-6 grade levels. (Few tribes are large enough to alone justify a separate investment.) However, development of the initial operational system, and conduct of the pilot project, would be with children in the Navajo area. The Navajo are a relatively large, somewhat isolated tribe, with a well-developed written native language, and therefore an ideal population for adequately evaluating the bilingual, bicultural approach. The process of diffusion of the ITV system to all Navajo children, and adapting it to other tribal groupings, would be started at the end of the pilot project.

The development of the Navajo operational ITV system for grade levels kindergarten through 12 will require sixteen years, including a six-year pilot project.[3] (Approximately 25 years would be necessary for bringing the system to all Indian children.) This amount of time for the pilot project is considered essential in order to insure that high quality programming is achieved prior to the first telecast use with Indian students. The experts consulted in this study concurred unanimously with the view that all four case studies, as well as other uses of ITV internationally, show a critical functional relationship between adequacy of preparation time, high quality programming, and learning effectiveness in the classroom. The Israel case study offers the most dramatic evidence supporting the need for an extended pilot period; the high acceptance of the system, and its objectively superior performance, was attributed to the high quality programs which in turn were attributed to the extended pilot period.

Six years may seem to be a very long time for a pilot project, and 16 years a very long time for development of the operational system. Perspective is critical, however. It is generally accepted that it has taken 20-40 years for major educational innovations to diffuse throughout the American school system. And the six-sixteen time frame is short in the context of prior attempts to improve Indian education: the Meriam report of 1928 made recommendations on the need for boarding school reforms and for emphasizing Indian culture in the schools which have yet to be full realized.

The pilot project is viewed as an integral part of the overall development plan and in this sense is dramatically different from the typical pilot/demonstration project. Because of the economices of scale associated with ITV, a rather sizable group of Navajo children can be involved in the pilot project and the materials developed in the pilot period will be directly useable in an expansion of the system to cover the entire Navajo children population without duplication of the development process at the pilot grade levels. Assuming educational success of the system during the pilot period, development of materials for subsequent grade levels would start at the next grade level beyond that covered in the pilot project.

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[3] It is recognized that the current Navajo school system involves both a kindergarten and beginners level prior to Grade 1. Rather than presume the need for both levels with the proposed ITV system, it is recommended that a determination on the desirability of a "pre-school" level be made on the basis of pilot project results.

Development of the ITV programs and teacher/student supporting materials, and the initial training of teachers and monitors, would proceed at the rate of one grade level per year, starting with the kindergarten level. For a given grade level, two full years would be required as a development cycle: initial production of the programs and supporting materials would be completed during the school year of program year number one for that grade level; the immediately following summer would be devoted to an extended workshop/seminar for the training of teachers/monitors and for final adjustment and refinement of the teacher/student materials.

Testing of the developed materials would be accomplished during the school year of program year number two for each grade level, with the immediately following summer being used to refine and adjust the programs and materials on the basis of feedback from the results of the test evaluation. Subsequent revision of the curriculum, ITV programs, and supporting materials, would be accomplished on a regular periodic basis for each grade level (e.g., once every three or four years).

The kindergarten through 12 progression in development of the operational system is essential for both pedagogic and economic reasons. Starting with the kindergarten level means that the Indian students served by the system would be given the opportunity to acquire the basic foundations needed to succeed at the higher grade levels and thereby to break the "failure syndrome" circle discussed in Chapter II. Also, it will not be necessary to develop programming at the higher grade levels twice--once now to compensate for the learning deficits of the current student population (with no sound expectation that this could possibly bring their performance to a level comparable to a national average) and then again later for the students who will have received all of their education through the ITV system.

In summary, the development schedule for the proposed ITV system reflects a generational social change strategy; the ITV system proposed is not a "quick fix" solution to the educational problems of Indian children.

The Extended Pilot Project

A pilot project, modeled along the lines of the Israeli pilot period, is recommended. The essential feature of the pilot project is provision of enough development time, given the need to incorporate a bilingual, bicultural approach, to assure high quality programming.

Purposes. The pilot project would have four objectives.

1. To establish a firm foundation for development of the operational ITV program by providing an initial two-year period during which project staff will be recruited, project facilities established--including the Television Center--and curriculum planning accomplished in the context of an in depth exposure to, and study of, the Navajo culture;

2. To develop and test the ITV system concept, including all operating sub-systems--curriculum preparation unit, ITV program production unit, training and utilization unit, maintenance unit, and research and evaluation unit--as well as the learning effectiveness of the ITV programs and supporting teacher and student materials in the classroom;

3. To collect costing data, and demographic data on the Indian population in addition to that currently available, in order to prepare sound cost/effectiveness estimates for implementation of the kindergarten-12 operational system with all Indian children;

4. To develop the plans for continuation of systems development beyond the pilot project period and for its diffusion to the remaining Navajo children, Indian children on the reservations of other tribal groupings, and to the public school systems near the reservation areas serving Indian children.

Phasing of Activities. In order to provide adequate opportunity for careful coordination of efforts that will be required and to avoid the pitfall of attempting to accomplish too many different goals simultaneously, a phased schedule of activities for the pilot project is proposed which would bring project activity up to the level in the 5th year which would be required on an annual basis for completing the development of the operational system. The phasing of activities during the pilot project also reflects the overall plan for diffusion of the system. Materials will be developed first for use in the BIA boarding and day schools and in the proposed viewing centers. Spread of its use to other BIA schools and viewing centers will then be assessed followed by adaptation and assessment of the materials for use in the public school systems. The tasks to be accomplished during the pilot project are identified in Figure 2. A task/time schedule of these activities is presented in Figure 3, reflecting the phasing discussed above as well as progressive development and introduction of the materials starting with the kindergarten level through the 1st and 2nd grades.

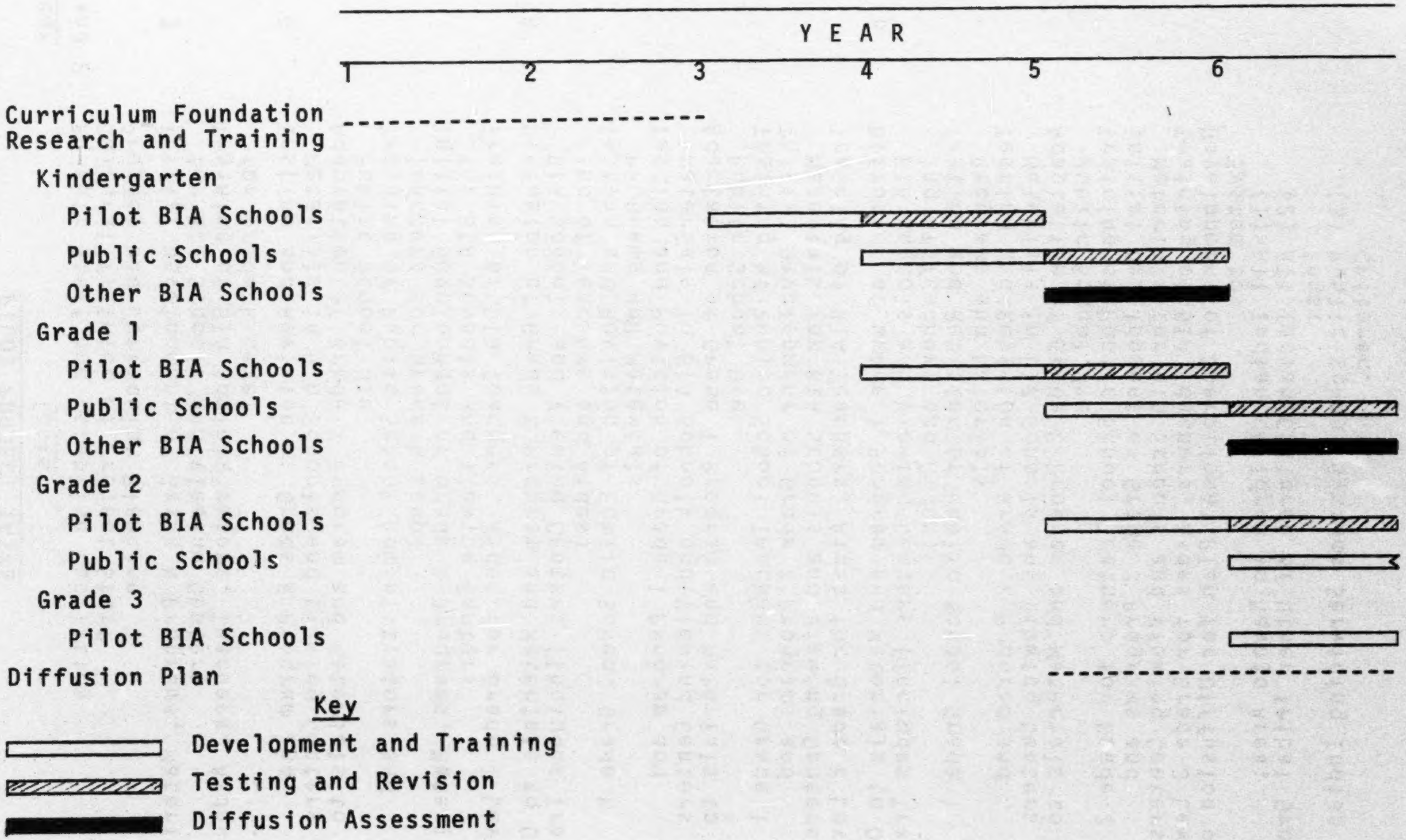
Figure 2

PILOT PROJECT TASKS

Year	Tasks
1 and 2	Recruit Staff and Establish Facilities
	Cultural Training of Project Staff
	Project and Curriculum Planning
3	Initial Development of Grade K Programs, Materials for BIA Schools and Viewing Centers
	Training of BIA Administrators, Teachers, Aides for Grade K Level
4	Testing and Revision of Grade K Program and Materials in BIA Schools and Viewing Centers
	Adaptation of Grade K Program and Materials to Public School Use
	Training of Public School Administrators and Teachers for Grade K Level
	Initial Development of Grade 1 Programs, Materials for BIA Schools and Viewing Centers
	Training of BIA Teachers, Aides for Grade 1 Level
5	Diffusion of Grade K Program and Materials to Other BIA Schools and Viewing Centers (Includes Training of Teachers and Aides)
	Testing and Revision of Public School Grade K Programs and Materials
	Testing and Revision of Grade 1 Program and Materials in BIA Schools and Viewing Centers
	Adaptation of Grade 1 Program and Materials to Public School Use
	Training of Public School Teachers for Grade 1 Level
	Initial Development of Grade 2 Programs and Materials for BIA Schools and Viewing Centers
	Training of BIA Teachers, Aides for Grade 2 Level
6	Diffusion of Grade 1 Program and Materials to Other BIA Schools and Viewing Centers (Includes Training of Teachers and Aides)
	Testing and Revision of Public School Grade 1 Programs and Materials
	Testing and Revision of Grade 2 Program and Materials in BIA Schools and Viewing Centers
	Adaptation of Grade 2 Program and Materials to Public School Use
	Training of Public School Teachers for Grade 2 Level
	Initial Development of Grade 3 Programs and Materials for BIA Schools and Viewing Centers
	Training of BIA Teachers, Aides for Grade 3 Level
	Development of Operational Plan for Diffusion of System to: (1) All Indian Children in Navajo Area; (2) All Indian Children of Other Tribal Groupings; (3) Public School Systems Servicing Indian Children.

Figure 3

PILOT PROJECT TASK/TIME SCHEDULE



Research and Evaluation. A separate research and evaluation unit within the Television Center complex would have two major functions.

The first function would be to provide consultative advice and assistance to the curriculum planning and the program production units on their programs of formative evaluation studies. These would be studies designed to provide feedback to personnel in those units regarding the extent to which their output is achieving specified behavioral objectives. For the most part the feedback will be based on pupil performance in the classrooms of the pilot project experimental schools. Also included under the category of formative evaluation studies would be assessments of operational sub-systems performance. This would include feedback from the managers of the sub-systems, the participants themselves, and the judgments of administrators, teachers and other personnel trained at the Television Center.

The research and evaluation unit would also be responsible for conducting summative evaluation studies. These are the studies of pupil performance with the final ITV program and materials which would be compared to the performance of pupils in the BIA boarding and day schools not serviced by the ITV system and the public school systems not utilizing the adapted ITV programs and materials. The research and evaluation unit would be charged with selecting the control group schools, working with school officials to set up the necessary administrative arrangements, and for collecting such other data from all experimental and control group students which might be necessary for an adequate evaluation of the effectiveness of the ITV system.

The research and evaluation staff would be attached to the Office of the Program Director in order to avoid administrative impediments to the performance of its functions.

Operational Considerations.

Teacher Involvement: In addition to the regular Television Center staff, selected BIA teachers and public school teachers would be involved in the development process. This would be accomplished by establishing a few positions at the Center which would be filled on a rotating basis by practicing teachers. Consideration should be given to selecting the teachers not only on the basis of their backgrounds and experience, and the recommendations of their school system supervisors, but also on the basis of evaluating inputs from peer teacher groups and students. Utilization of teachers in development of the system will help to ameliorate resistance to the system, but it also will help to avoid impractical or unrealistic programs that might be developed by specialists who have had little day-to-day contact with Indian children in learning situations.

BIA Teacher Certification: BIA teachers, being government employees, have Civil Service status. It will be necessary, therefore to draw up new position descriptions for the teachers who will be involved in the pilot project in the classrooms with reference to their assignment to the pilot project. This flexibility is essential in order that effective control of the Board of Directors can be exercised over the selection and retention of teachers in the project. Otherwise, the need to cope with seniority and other similar perrogatives of the Civil Service system, in order to be sure that the ITV system received a sound evaluation, would be overwhelming.

Transmitting System: For the pilot project, it is recommended that some variant of closed circuit television be utilized for program transmission. This could be a coaxial cable system, if the experimental pilot project boarding and day schools are not too far from the Television Center. A coaxial cable system would be desirable, other things being equal, because there is no arbitrary limitation on the number of channels that can be built into a system. However, cable leasing is expensive when the cables must run long distances.

If the geographical distribution of the BIA boarding and day schools and the viewing centers is such that its use is feasible, a less costly system would be a 2500 megaHertz (mHz) Instructional Television Fixed Service (ITFS) system. Actually the 2500 mHz system limitation of four channels would not be disabling with respect to the pilot project, inasmuch as it is only in the 5th year that three of the channels would be used simultaneously.

The ITFS system will require a Federal Communications Commission (FCC) license. Beyond the pilot project period, assuming the decision is made to proceed with development of the full system, it is likely that an open air system on one of the Very-High Frequency (VHF) channels two through thirteen, or on one of the Ultra-High Frequency (UHF) channels fourteen to eighty-three, would be required in order to reach all parts of the Navajo area. The effective limit of an ITFS transmitter is about twenty miles, but the system's range can be increased through the use of micro-wave relay stations.

Linkage with Viewing Centers: It is hoped that viewing centers for the pilot project will be located near enough to the Television Center to allow easy access by motor vehicles. This will be necessary so that the Center and the non-professional monitors at the viewing centers can keep in close contact, without the monitors being abandoned to their own means in coping with the experimental ITV programs and the students. Over the long haul, it will probably be desirable to establish a radio communication linkage modeled on the Royal Flying Doctors Service in Australia. It may even be possible to assess the feasibility and appraise the cost of such a system during the diffusion acitivities of the pilot project. Such a communication service would be only one part of the utilization service function which would be formally assigned to the unit which conducts training during developmental work. The utilization effort will involve information feedback from the classroom to the Television Center as the ITV system becomes operational.

Cost Estimate.

In order to develop a cost estimate for the pilot project, it was necessary to arbitrarily select a Navajo area location. Chinle and environs were selected. The selection should not be considered a site recommendation, because no costing site visits, engineering feasibility studies, or discussions with the Indian residents were conducted, as these were beyond the scope of the project. At the same time, serious consideration should be given to this particular site, inasmuch as this would facilitate transfer of the expertise and experience from the bicultural approaches being developed nearby (e.g., Rough Rock).

The Navajo student population that would be served if the pilot project is located in the Chinle and environs area is estimated in Table 7. As indicated, a total of 1,300 in the Federal school system, and 474 in the public school system, a total of 1,774 students, would be participating in the sixth year, with roughly one-third having received three years of exposure, one-third two years of exposure and the remaining one-third one year of exposure.

Project costs for the six-year pilot period are summarized in Figure 4. They total $7,267,940 for the six-year period. As one frame of reference for appreciating the cost efficiency of the proposed ITV approach, the 1969 statements of representatives of the Bureau of Indian Affairs are helpful (Senate Subcommittee on Indian Education Hearings, 1969, Part I, p. 488). They estimated that approximately $1,800,000 per year in additional funds would be required to allow the Federal boarding and day schools to meet the needs of an analytic unit of 500 Indians. This is $4,900,000 in additional funds per year for 1,300 students, or $29,400,000 in additional funds over six years.

While almost half of that amount was for improvement in non-instructional areas, it can be seen that the projected investment (even allowing a generous error factor) in the proposed ITV pilot project is not only well within other Indian-education improvement cost projections, but in terms of the potential distribution of high quality instruction to the public schools, a most attractive cost/effective alternative.

Table 7

ESTIMATED PRIMARY GRADE ENROLLMENT: NAVAJO AREA, CHINLE ENVIRONS

Grade	Federal School Enrollment Navajo Area	Estimated Navajo Enrollment,1/ Chinle Environs Federal Schools	Chinle Public School	
Total Students in			Total	Indian
Grade K-2	8,375	1,300	509	474
Kindergarten	355	91	87	79
Beginners	2,635	386	108	108
First	2,663	426	167	151
Second	2,704	397	147	136

Source: Bureau of Indian Affairs, Fiscal Year 1969, Statistics Concerning Indian Education, Tables 4, 5, and 8.

1/Estimates derived by apportioning the total enrollment of Chinle, Low Mountain, Many Farms Elementary, Rock Point, and New Cottonwood schools by grade level distribution of the Navajo Area schools. Chinle Public School enrollment provided by the principal of the Chinle Elementary School.

Figure 4
ESTIMATED EXPENDITURES FOR THE SIX YEAR PILOT ITV PROJECT IN THE NAVAJO AREA

Year 1	Capital Investment	$ 430,250
	Operating Costs	320,370
	Total Year 1 Costs	750,620
Year 2	Capital Investment	430,250
	Operating Costs	640,740
	Total Year 2 Costs	1,070,990
Year 3	Operating Costs	961,120
	Total Year 3 Costs	961,120
Year 4	Operating Costs	1,281,490
	Total Year 4 Costs	1,281,490
Year 5	Operating Costs	1,601,860
	Total Year 5 Costs	1,601,860
Year 6	Operating Costs	1,601,860
	Total Year 6 Costs	1,601,860
	Total, 6 Year Pilot Project Estimated Expenditure	$7,267,940

Note: Annual operating costs for the first four years were computed by a 20 percent progression per year to the full operating expenditure level reached in the fifth year.

Some of the same non-instructional changes proposed by BIA also could be made well within acceptable total system cost tolerances, compared to current and projected additional costs for improving existing traditional systems.

Figure 5 presents the assumptions utilized in developing the cost estimate. By making them explicit, readers who do not agree with them can compute revised cost estimates based on revised assumptions.

Figure 6 presents the estimated capital investment costs which are amortized over the first two years of the pilot project. As noted earlier, a 2500 megaHertz system, with microwave rlay stations, is assumed for cost estimating purposes. It should be reiterated that this particular system configuration is not essential; closed circuit or open-air systems can be used if engineering feasibility studies indicate their desirability (cost estimates, of course, would have to be adjusted accordingly).

Figure 7 summarizes the estimated annual operating costs for the fifth and sixth years of the pilot project. The total of $1,600,000 also can be taken as a crude ball park estimate of subsequent annual operating costs for completion of the system for the Navajo area. Figure 8 presents the detailed line item expenditure projections on which the total annual operating cost estimate is based.

Program Control

Beyond the pilot project period, it is envisioned that the development work to achieve a full kindergarten-12 operational system would remain under a Board of Directors having heavy Indian membership. Operation of the ITV school system itself, after it is developed, would be transfered to Indian control on a phased basis, so that, ultimately, Indian school boards would share in the control of the school systems along the lines that local school boards function in the rest of the United States.

Diffusion of the system to other Indian tribal groupings on reservations would follow the above model of Indian participation in control of the process. Diffusion throughout the public school system would necessarily differ. To encourage local school boards to have more Indian membership, the availability of Johnson-O'Malley funds could be made contingent upon some proportional representation criterion. Hopefully, this would motivate both the Indian parents and the host school community.

The desire of the Indians for Indian control of their education should not be taken lightly. As Mrs. Annie Wauneka, representative of the Navajo tribe, has testified before the Senate Special Subcommittee on Indian Education:

Figure 5

ASSUMPTIONS

The cost estimate of the pilot project on pages is based upon seven assumptions.

1. Use of a 2500 megaHertz Instructional Television Fixed Service with production and transmission facilities.
2. Sixteen receiving sites (6 schools and 10 viewing centers in remote areas).
3. Ninety-four receivers.
4. Approximately 1800 students.
5. Six twenty-minute instructional television presentations for 3 grades (kindergarten and beginners, first and second grades) for 150 school days (2 x 150 = 300 hours per year).
6. All production of ancillary materials, training, and control functions to be housed at the ITV pilot project.
7. Capital expenditures do not include staff living accommodations.

Figure 6

ESTIMATED CAPITAL INVESTMENT COSTS OF AN ITV CENTER IN THE NAVAJO AREA

Capital Costs	
Buildings	
Building Complex for Production Transmission, Administration (10,500 sq. ft., $22 per sq. foot)	$231,000
Viewing Centers (10) (400 sq. ft. geodesic domes)	48,000
	279,000
ITV Program Production Equipment	
Studio (semi-professional quality, including 3 cameras, lighting system, video-tape making capability, etc.)	100,000
Transmitting System for a 2500-megaHertz Instructional Television Fixed Service	100,000
Micro-wave Relay Systems (3)	30,000
Distribution Systems (6)	30,000
Generators (10)	20,000
Video-tape Recorders (3)	2,100
Video-tape (experimental and developmental production)	25,000
Video-tape Flash Receivers (12)	3,600
Black and White Television Receivers (schools-52, viewing center-20, reserve-10)	12,300
	323,000
Other Equipment	
Graphic Arts Department (paper conversion) (printing facilities including type-setting, camera department, plate making, reproduction off-set press)	22,500
Vehicles (3 jeeps)	6,000
Office Furniture and Equipment and Viewing Center Furnishings	130,000
	158,500
Other Capital Costs	
Miscellaneous and Contingencies	100,000
Total Capital Costs	$860,500

Figure 7
SUMMARY OF
ANNUAL OPERATING COSTS

Salaries and Wages	$1,146,500
Professional (35)	505,500
Technical (45)	426,500
Support (20)	124,500
Consultants (260 man days)	65,000
Internes (5)	10,000
Scholarship Grantees (3)	15,000
Fringe Benefits (20% of Salaries and Wages)	$ 229,320
Other Program Costs	$ 226,040
Materials and Supplies	132,325
Travel and Per Diem	22,810
Communications	9,100
Maintenance and Utilities	35,500
Contingencies and Miscellaneous	26,305
Total	$1,601,860

Figure 8

ANNUAL OPERATING COSTS
(Detailed)

Staff

Program Director	$ 30,000
Support Staff	12,000
Operations Coordinator	15,000
Support Staff	6,500
Research and Evaluation Director	18,000
Test and Measurement Specialist	15,000
Analyst	13,500
Test Administrators (4)	28,000
Support Staff	6,500
Community Relations Director	15,000
Assistant to the Director	10,000
Support Staff	6,500
Administrator	14,000
Support Staff	6,500
Maintenance Staff	13,000
Program Planning & Development Director	15,000
Support Staff	6,500
	231,000

Associate Program Director, Curriculum Development	20,000
Director of Cross-Cultural Education Resource Development	17,000
Psychologist	14,000
Anthropologist	14,000
Linguist	14,000
Educators (with experience in Navajo classrooms) (3)	33,000
Television Expert	12,000
Support Staff	6,500
Curriculum Development Director	17,000
Curriculum Development Specialist	12,000
Support Staff	6,500
Writers (2)	22,000
Graphic Arts Department Chief	12,000
Offset Press Operator	8,500
Secretary-Typesetter	8,000
Inter-departmental Co-ordinator	10,000
	226,500

Associate Program Director, ITV Production	20,000
Chief Engineer	18,000
Studio Engineer	12,000
Maintenance Engineer	12,000
Field Maintenance Engineer	12,000
Maintenance Technicians (3)	21,000

Producer	$ 15,000
Support Staff	6,500
Director	14,000
Floor Man	8,000
Set Designer	8,000
Cameramen (3)	33,000
Sound Equipment Operators (3)	33,000
Miscellaneous Program Production Personnel (10) (electricians, carpenters, painters, stage hands, etc.)	110,000
Tape Librarian	7,000
Script Writers (2)	20,000
Support Staff	6,500
Graphic Artist	10,000
Presenters (at level of 2 per year, $30 per day, 150 working days a year)	24,000
Inter-departmental Co-ordinator	10,000
	400,000
Associate Program Director for Teachers Training, Utilization and Viewing Centers Management	20,000
Director of Teacher-Training	17,000
Assistant Director	12,000
Educator-Advisor	12,000
Support Staff	6,500
Director of Utilization	12,000
School Liaison Officers (2)	16,000
Student and Teacher Materials Co-ordinator	7,000
Support Staff	6,500
Director of Viewing Centers	13,000
Viewing Center Managers (10)	70,000
Co-ordinator of Viewing Centers Support Materials	7,000
	199,000
Total Full-Time Staff Salaries and Wages	1,056,500
Part-Time (Indian student internes) (5)	10,000
Scholarship Grant Program (3)	15,000
Consultants (260 man days annually at $250 per man day including per diem and amortized travel)	65,000
Total Salaries and Wages	1,146,500
Fringe Benefits (20% Salaries and Wages)	229,320
Total Staff Costs	$1,375,820

Other Program Costs

Materials and Supplies	
Program Production (film, tape, etc.)	75,000
Other Expendable Materials and Supplies (5% of salaries and wages)	57,325
	132,325
Travel and Per Diem	
Local Travel	9,280
Travel to Viewing Centers (36,000 miles annually at .10 per mile)	3,600
Other Local Travel (14,300 miles annually at .10 per mile)	1,430
Other Travel (20 trips, averaging $300 each)	6,000
Ten Days Per Diem per Trip (50 days x $25)	2,500
	22,810
Communications	
Telephone and Telegram	8,600
Postage	500
	9,100
Maintenance and Utilities	
ITV System	
(Maintenance: 10% of equipment costs)	32,300
(Power: 1% of equipment costs)	3,200
	35,500
Contingencies and Miscellaneous	26,305
Total Other Program Costs	226,040
Total Operating Costs	$1,601,860

> The biggest problem is that we haven't had much success in this [BIA] Indian education. It is 100 years old now....it is about time that we get ourselves involved and plan some of this education, plan what is needed for our Navajo children to better themselves (1969 Senate Hearings, Part 3, p. 999).

Successful Indian control of Indian education is not without historical precedent. In the nineteenth century, such all-Indian management proved effective. In the early 1800's, the Cherokee chief, Sequoyah, developed a Cherokee alphabet. Before they were forced into Oklahoma in the 1830's, the Cherokee had become almost universally literate in Cherokee, were publishing their own newspaper, and had codified their laws (1968 Hearings, Part 2, pp. 868-869, pp. 918-919).

The Cherokee schools which were re-established in Oklahoma after the Civil War made such extensive use of a bilingual approach to education that the English literacy level of the Oklahoma Cherokee exceeded that of their Texas and Arkansas white neighbors. At the end of the century, the Indian seminaries enjoyed a reputation of being the best institutions of higher learning in the Western United States (Senate Report 91-509, p. 19).

SPECIAL ANALYSIS AND REPORT

THE POTENTIAL ROLE OF ITV IN JUNIOR AND COMMUNITY COLLEGES

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THE POTENTIAL ROLE OF ITV IN JUNIOR AND COMMUNITY COLLEGES

INTRODUCTION

This brief exploration of the possibilities of media in two-year colleges is presented as an Appendix to Volume I because the problems confronting these institutions differ basically from those of the other groups considered in the study and because the recommendations for media use involve a slightly different interpretation of the core media concept. Unlike the three disadvantaged learner target groups, junior/community college students characteristically have been "middle class" economically and socially. This is still largely the case despite the growing diversification of the student body as more "disadvantaged" youth seek post-secondary education.

If the core media concept is defined to mean using media extensively for some primary functions, the concept remains valid for two year colleges. However, if a more rigid definition is employed (i.e., if the instructional delivery system is dependent upon the use of media), the notion is not applicable.

The recommendations for use of media in junior/community colleges, suggested by insights from the case studies, are geared to two basic functions of these institutions: (1) to provide compensatory education; (2) to prepare students to enter the work force. Before elaborating on these recommendations, the characteristics, purposes and functions of junior/community colleges will be described.

THE TWO-YEAR COLLEGE SYSTEM

The Evolution of the Institution

The development of the two-year college system has been a unique American educational innovation characterized by a rapid growth rate. In 1900 there were only a few two-year colleges in the United States; by 1964 there were some 700 with a total enrollment of over 1,000,000 students. Current enrollment of full- and part-time students is approaching 2,000,000 and is increasing at an annual rate of approximately 14 percent. By 1975 an estimated 6.5 million pupils will be attending classes in more than 1,000 publicly supported community colleges (Thornton, 1966, p. 45), (Yarrington, 1969, p. x), (Kintzer, Jensen, and Hanson, 1969, p. 1).*

These post-high school educational centers are located in both rural and urban areas. Six hundred of the 1,000 are situated in areas with populations of 100,000 and under. The median enrollment for all public junior/community colleges is approximately 1,500. About 25 percent have enrollments of less than 600 students; only 21 percent boast a student body of over 3,000 (Hall, 1968, p. 3).

This report focuses exclusively on public, two-year educational institutions offering post-high school instruction. Private two-year schools, such as business, secretarial or technical schools, are not included. Edmund J. Gleazer, Jr., Executive Director of the American Association of Junior Colleges has characterized the community or junior college as follows:

> (It is) a two-year institution of higher education, generally public, offering instruction adapted in content, level and schedule to the needs of the community in which it is located. Offerings usually include a transfer curriculum, occupation (or terminal) curriculum, and adult education (Gleazer, 1969, p. 13).

Junior/community colleges traditionally have maintained an "open door" admission policy, permitting any high school graduate who desires to register to do so. The policy represented an attempt by these institutions to democratize higher education and was based on the assumptions that such education was essential for the improvement of society and for individual social mobility. In many areas, the open door policy is being expanded. For example, the Missouri Assembly in 1969 considered a proposal to allow these schools to admit non-high school graduates to specialized programs. Similarly, all New York community colleges are under mandate to provide a full range of services to all high school graduates and to all older persons seeking further education, irrespective of secondary school credentials.

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*References in this appendix are included in the list following Chapter IV of the report.

Enrollment pressures have forced junior/community colleges in some states to become more selective, however. The Massachusetts junior colleges, confronted with more students and limited facilities, are accepting only one applicant out of four.

In most states, two-year colleges are considered part of the higher education system. However, administrative-organizational patterns vary from state to state. For example, Maryland community colleges were controlled by local boards of education until 1969 when a newly-created State Board for Community Colleges assumed full responsibility. The arrangement is similar in Minnesota. Until recently, Minnesota junior colleges were operated by local school districts and were located in high schools; in the early 1960's all responsibility for two-year colleges was transferred to a State Junior College Board. The five member board has all powers necessary for management, jurisdiction, and control. In Pennsylvania, local school districts, municipalities and counties were granted authority to sponsor community colleges under the 1963 Community College Act. However, the State Board of Education is empowered to adopt policies and minimum standards for operation.

Most states are striving to develop a system of two-year colleges with one located within commuting distance of every potential student. Guidelines for development of the colleges have been incorporated in master plans, which almost every state has drawn up. As an illustration, the Virginia master plan recommends dividing the state into 22 community college regions, based on population. At least one college will be built in each region; densely populated regions will be served by more than one campus. The entire system was designed to accommodate a total of 102,000 students (32,000 full-time and 70,000 part-time). In recent years, the states have evidenced increased interest in junior and community colleges and have allocated state funds for their support. Massachusetts was the first state to completely finance a junior/community college system (Yarrington, op. cit., p. 83).

Characteristics of Two-Year College Students

Because of the open door policy and the varied curricula offered, junior/community colleges attract students whose academic capacities differ greatly. Some ranked academically in the top third of their high school class, some ranked in the lower third, but the preponderance of entrants ranked in the middle range (Hall, op. cit., p. 12).

R. J. Panos constructed a student body profile from data on 6,860 entering freshmen at a sample of accredited two-year colleges in the fall of 1965. He obtained information on a variety of characteristics including sex, age, race, high school grades and educational aspirations (Panos, 1966).

Panos found that 55 percent of the students were men; the modal age of the student body was 18 to 22 years, but a significant percentage of the enrollees were older adults. Racially, 93 percent of those enrolled were Caucasian, one percent were Negro, 0.8 percent were American Indian, and 0.7 percent were Oriental; the remainder were members of other races. The racial composition is changing as more two-year colleges are being established in urban areas.

A preponderance of the students (89 percent) were graduated from public secondary schools, six percent attended Roman Catholic high schools, and the remainder came from other private secondary schools. The modal group (26.4 percent) reported a grade average of "C" in secondary schools; slightly more than 24 percent had a "C+" average. This compares to the median grade average of "B" to "B+" for students entering four-year institutions.

Students indicated interest in studying a variety of subjects. When asked to name their probable field of concentration, the category most frequently mentioned (business) was chosen by only 20.7 percent of the students. Responses tended to be divided almost equally among several majors.

Junior/community college students interviewed by Panos had high aspirations for continuing their education beyond the two-year level. Approximately 74 percent hoped to obtain at least a baccalaureate degree, and nearly half of these wanted to extend their formal education beyond that level.

Apparently students' aspirations often are not realized. Other studies have indicated that a significant percentage do not complete the two-year program. Roger Garrison stated the drop-out rate for the first semester is 35 percent or higher in some junior colleges (Garrison, 1967, p. 22). John McGeever and R. L. Burton surveyed former students of Palomar College in San Marcos, California to determine why they had severed their relationship with the school. The 310 respondents offered 367 reasons for dropping out. However, the most common causes given were: transfer to another institution; low grades and inadequate preparation for two-year college work; lack of finances and acceptance of a full-time job.

Emerging Trends

Several trends reflecting the future role of junior/community colleges are emerging. First, they are less inclined to develop programs leading to their eventual conversion to four-year institutions. Second, they are de-emphasizing specialized, technical programs which resemble those provided by vocational schools. This trend is apparent in Hawaii, where the public technical schools were converted into community colleges, and in Virginia, where three technical colleges and five vocational schools were transferred to the new comprehensive community college system. Third, their ideas concerning proper goals appear to be crystallizing around the provision of three types of curricula.

Generally, a consensus is developing among educators that two-year colleges should offer academic and general education, remedial programs and courses geared to prepare students to enter the labor force without further advanced training. They are also agreeing that junior/community colleges should strengthen relationships with the communities they serve.

Junior/community colleges in most states are striving to increase enrollment in occupation-oriented courses. They hope to have an equal number of students in the job preparation and the general academic or transfer curricula, although presently a majority of students are taking courses paralleling those offered to freshmen and sophomores of four-year institutions. Michigan two-year colleges were able to augment their business and health career programs by introducing an audio-visual-tutorial teaching technique. Some states are experiencing difficulty in achieving the 50-50 balance. Maryland junior/community college students continue to enroll in the transfer curriculum despite college officials' efforts to increase the number of pupils in occupational courses.

The tendency to establish closer ties with local communities is apparent in New York. The State has established, under the jurisdiction of its community colleges, five urban centers offering a wide range of compensatory and vocational courses to disadvantaged students.

In Kansas, the state agency responsible for two-year colleges has assumed leadership in defining purposes and goals. The master plan it drew up proclaimed the state's intention to establish a uniform system of quality public junior colleges integrated into the State's overall educational program. The two-year institutions are to be a component of the higher education system, not extensions of high schools; they will be designed to complement, not compete, with other post-secondary schools. Within this general state-established framework, the individual junior colleges will develop goals and programs.

PROBLEMS CONFRONTING TWO-YEAR COLLEGES

Search for Identity

Junior/community colleges generally seem to be groping for an identity, and considerable confusion and debate centers around their purposes, functions and relationships to other post-secondary educational institutions. The fact that the Boss and Anderson bibliography covering literature written from 1957 to 1967 contained 215 references concerned with the purpose of junior/community colleges is apt illustration of this quest for definition.

Part of the identity problem results from the attempts of junior/community colleges simultaneously to be unique, innovative, and traditional. They serve a student body more heterogeneous in both ability and purposes for seeking post-secondary education than do four-year colleges and universities. Some enrollees look to the school to prepare them for transfer to four-year institutions; some want to receive the training necessary for entrance to the labor force at a semi-professional level; others desire a general up-dating and up-grading of educational background so they may re-enter the labor force after a few years absence; and still others are seeking training so they may advance in their occupation.

The two-year colleges can be considered innovative in the sense that their students come from a broader spectrum of the population than do the four-year college students and because of the fact that their curricula are more attuned to occupational preparation sought by their students. However, because they have developed according to a traditional American college model, many have become small-scale replicas of four-year institutions. This occurred partially because educators believed that by emulating the best university models, junior/community colleges could overcome their sense of inferiority, and partially because junior/community college planners were prone to utilize experiences of others rather than strike out in innovative directions more specific to the actual functions of a two-year institution. Thus, traditional campuses were built and standard curricula were introduced. As a result, many junior/community college courses are almost duplicates of those offered to freshmen and sophomores of four-year colleges and universities. On the other hand, since two-year colleges are also involved in training students for occupations, they have had to guard against duplicating efforts of technical and vocational schools.

Almost all junior/community colleges are confronting the issue of identity, and a general national consensus on goals may develop. However, each institution must grapple with the problem of becoming a unique entity, taking into account its requirements and circumstances such as geographic location, urban or non-urban setting, size of student body, students' educational interests and aspirations, and relationship to the community.

Other Problems

In addition to the fundamental difficulty of having a blurred self-image, junior/community colleges face other problems. One is lack of adequate funds. Two-year colleges in most states are supported by the state, the local community and minimal tuition fees. Enrollment increases generally are outstripping increases in funding. James Thornton has predicted that community junior colleges' problems of securing adequate financial support will grow more acute as they attract a larger share of the rapidly growing college enrollments. He points out:

> They are in competition with elementary and secondary schools for local property tax money, and with state universities and colleges for income from the state treasury. In each case, they are somewhat handicapped (Thornton, 1966, pp. 280-287).

A second problem is the lack of coordination of the junior/community college transfer curriculum with advanced curricula of four-year colleges and universities. Two-year college transfer programs could be dovetailed with academic requirements of four-year public institutions in the state, and counseling services could be expanded to ease difficulties in transferring (op. cit.).

A third criticism leveled against two-year colleges concerns their isolation from the community. Administrative procedures and traditional campus settings of typical junior/community colleges have reinforced the notion that education is something to be obtained in "remote" areas. These factors have detached colleges from community activities and problems and the resulting isolation has obstructed both the community and the school from receiving the benefits of interaction. For example, junior/community colleges have increased the number of technical and semi-professional courses, but due to the absence of extensive contacts between them and local employers, students may not be aware of job openings and employers may be equally uninformed of the training opportunities available to their work-forces. In many states, junior/community colleges and the communities they serve are trying to develop closer relationships.

Another problem, which could be called a by-product of success, is that of increasing depersonalization resulting from growth of the campus and the number of students. Thornton, in describing the transition of many junior/community colleges from small, personal institutions to large impersonal ones, called for retention of the basic values of college-community cooperation. He urged colleges not to overlook these benefits in a search for bigness, administrative convenience or fiscal economy (ibid.).

Some commentators on junior/community colleges have implied that the dangers of excessive size may be a false issue. Planners may have presented overly optimistic forecasts of rising enrollment rates in state master plans, and some states may be committing more money for constructing new institutions than will be warranted by actual future enrollments. Many factors could influence a leveling or decrease in enrollment. The advent of new industry-school training programs, an increase in educational programs offered by institutions other than colleges, or a rise in the number of well-paying technical- and service-oriented jobs requiring minimal academic training could offer potential students alternatives to junior/community colleges.

Nonetheless, enrollment pressures and crowded facilities are realities in most areas. This is largely attributable to the open door admissions policy, although numerous students who enter junior/community colleges with ease do not return after the first or second semester. They may not be equipped with the proper academic foundation to succeed in two-year colleges. While acknowledging the serious deficiencies in reading, composition, mathematics and other basic skills of many entering students, few two-year colleges have instituted remedial programs to overcome these deficits. "Applied remedial" programs instructing students in the use of basic skills to deal with their course work are rare. As more junior/community colleges are established in urban areas and become accessible to students who vary widely in ability and the adequacy of their secondary schooling, the need for compensatory programs can be expected to increase.

THE POSSIBILITIES OF MEDIA

Analysis of future trends and challenges facing two-year colleges suggests two functions which will be emphasized increasingly: equipping academically ill-prepared students for post-secondary schooling, and educating students to enter occupations at a semi-professional level. New educational techniques employing media could be developed to carry out these responsibilities.[1]

Providing Compensatory Education

As was mentioned previously, the two-year college student body is diverse in terms of academic skills and preparation. Though some are brilliant students, a number demonstrate marked weaknesses in such basic skills as reading, writing and mathematics. Yet, many junior/community colleges do not make special attempts to upgrade the academic competencies of ill-prepared students. A national investigation conducted in 1968 revealed that 91 percent of the nation's two-year colleges follow the open door policy but only 20 percent of these offer special programs for low achievers. The researchers concluded that more than two-thirds of the junior/community colleges expect low achievers to find adequate instruction from regular school courses (Hall, 1968, p. 25). Apparently many academically ill-equipped students cannot cope with the regular curriculum. As the McGeever-Burton survey revealed, low grades were frequently given as a reason for discontinuing junior/community college studies.

If the "open door" is not to become a "revolving door," these two-year institutions will need to develop programs designed specifically to strengthen the weaknesses of low achievers. Media can be used to provide compensatory education both to students who experience academic difficulty in the first or second semester, and to potential junior/community college pupils.

The remedial program for students could focus on basic subjects such as mathematics, English composition, reading comprehension and social sciences, and on other topics taught in junior/community college introductory courses. It could specifically provide instruction on improving study techniques. Because these subjects are usually taught in a relatively standardized way, the same films and tapes could be used by many institutions over a relatively long period of time, thereby reducing the cost of devising software specific to the purpose.

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[1] During the last fifteen years, many successful attempts to use media as a supplement to classroom instruction have been undertaken. However, only a few colleges have utilized it as a primary mode of teaching. (Chicago's Television College has done so with some success.) Experiments have indicated that effective use would require careful co-ordination of human and material resources, synchronization of program production, and development of sophisticated software (Wagner, Lybrand, and Resnick, 1969).

Remedial courses could consist of two components: media presentations offering basic instruction and study or discussion groups supervised by a faculty member. The small group discussion sessions could be designed to reinforce the lessons offered in the films and tapes and to motivate students. Faculty supervisors could demonstrate ways of applying the knowledge thus gained to other college courses.

Students should be enrolled in the compensatory program at the first indication of academic difficulty. They could participate in the short-term, intensive tutorial program while simultaneously pursuing regular courses of study, although many students may need to drop some regular courses in order to concentrate on strengthening basic skills.

If remedial instruction is to benefit students substantially, it must not only impart basic skills, but must relate these skills to regular college work. Techniques of applying fundamental knowledge can be conveyed in the discussion groups and can be reinforced by coordinating compensatory lessons with introductory courses. This integration of films and tapes, topics covered in study groups, and introductory course material would require close working relationships among media producers, discussion group supervisors, faculty members responsible for basic courses and perhaps other college and media personnel. These people could identify topics appropriate for remedial study and determine general approaches to subject matter.

While this coordination would be a key to the remedial program's success, it might result in rigidity. If media presentations were produced by a state agency for use throughout the state's two-year college system, all remedial programs would be essentially identical. Even more uniformity would result from coordination of compensatory programs and introductory courses. This standardization need not deter faculty members involved in any aspect of the system from interjecting imaginative approaches to topics, however.

The media component could be produced by a state agency, perhaps the one having jurisdiction over the junior/community college system. This approach might be particularly suited to states having well-integrated two-year college systems and a relatively homogeneous student body. In other States with heterogeneous populations and sharp urban-rural distinctions, media production responsibility might be delegated to regional agencies, each serving a homogeneous area. Because of the costs involved in producing a high quality media presentation, the colleges would be well advised to eschew individual production.

Criteria regarding the qualifications of personnel associated with media production and utilization should be carefully drawn. Those responsible for developing the media component should be familiar with needs of low achievers, appropriate pedagogical techniques, and the use of media as a teaching aid. Two-year college personnel using the films and tapes should be aware of technical problems which might arise as well as the educational purposes of the productions.

The remedial program should be offered on a schedule flexible enough to accommodate all students requiring assistance. If compensatory groups are organized at various times during the semester, difficulties in coordinating topics covered in remedial lessons with those considered in introductory courses might arise. These problems could be overcome, however, if compensatory lessons are designed to stress basic techniques and concepts rather than subject matter per se.

A compensatory program for potential junior/community college pupils similar to the one for first-year students could be developed. High school graduates or others who are considering attending a two-year college, but who recognize their academic weaknesses could enroll in a junior/community college summer remedial program using the same media productions employed in the course for first-year students. The films and video tapes could be supplemented not only by faculty-supervised group discussions, but by correspondence lessons. No college credit would be awarded, as the primary purposes of the sessions would be to prepare potential students for two-year college work and indicate their probabilities of success.

The potential advantages of a pre-college compensatory program are many. Academically disadvantaged students would be given an opportunity to overcome their weaknesses before entering two-year institutions and enrolling in courses for credit. The program would serve as a transition from high school to post-secondary study for students who are not only low achievers but who also are emotionally ill-prepared for two-year college work. It would also provide an opportunity for older persons desirous of entering continuing education programs to orient themselves to an academic atmosphere.

An additional advantage of such a remedial program would lie in its subsidiary role of acquainting the colleges with future students. Knowledge and analysis of their strengths and weaknesses could lead to changes in the level at which first-year subjects are taught and instructional techniques used. The program, hopefully, would lead to a decline in the drop-out rate for first year students and an upgrading of the education of two-year college graduates.

Improving Occupational Education

Increasingly, junior/community colleges are committing resources to curricula designed to prepare students to enter the labor market at semi-professional levels. While consensus regarding the appropriateness of stressing occupational education has not developed, current trends indicate that educators will begin to consider the job-oriented courses as essential to the two-year college curricula as the liberal arts courses traditionally offered.

Norman Harris defined "occupational education" as instruction and training aimed at preparation for employment, as distinguished from liberal arts, fine arts or humanities curricula. Occupational education, according to Harris, encompasses courses which will prepare students to assume semi-professional, technical and skill-level jobs in any field of employment (Harris, 1966, p. 43). Occupational education, in his view, prepares students for careers in technical engineering, medical technology, business data programming and some areas of science and mathematics. While teaching technical knowledge and general education, it also emphasizes skill in using tools and equipment.

As junior/community colleges allocate more financial and faculty resources to providing occupational education, they will have to confront the problem of rapid technological change. To be effective, they will need to keep abreast of technological advances and changing manpower needs. Teaching techniques should be flexible and adaptable to frequent updating.

Occupation-oriented courses could include classroom instruction, regularly revised film and video-tapes, and internships or on-the-job training. Faculty members could concentrate on imparting basic concepts and skills; the media component could provide current information on equipment and technological innovations. In courses where demonstrations and experience in using machinery are necessary, faculty members could arrange to use appropriate facilities available in the local community. Students could also gain experience through an internship or work-study program, devised in cooperation with local or national employers. Some variation of on-the-job training for the more complex semi-professional technician occupation would likely prove equally attractive to students and employers.

It may even be possible to put regular course work on film or video-tape for students enrolled in specifically occupational programs so that the student would have greater flexibility in setting his schedule of work and study. Some device (quizzer at the viewing centers or some similar prod) would probably have to be used to assure the student's attentiveness to both phases of his work-study program.

However, the greatest advantage of media (film, video-tape, regular television) would lie in its capacity for presenting realistically and functionally a wider variety of industrial processes and techniques than would otherwise be likely, given the budget constraints faced by most schools.

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